Department of Education

가정 학습
3 학년

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버전 2

Learn at Home: Grade 3
New York City Department of Education
T&I-11301 (Korean)

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추가의 웹 자료들이나 업데이트된 자료들은 이 웹사이트에서 찾아볼 수 있습니다: http://schools.nyc.gov/learnathome.

Day 1 Schedule

Subject	Minutes Per Day (At Least!)	Assignments	What Did I Learn Today?
Reading and Writing	45	• Learn new vocabulary words from the Vocabulary List • Activity 1: Reading • Activity 2: Review the Parts of a Book	•
Math	45	Complete: • Activity 1: Number of the Day • Activity 2: Guess If You Can	•
Science	30	• Green Energy Jobs (English or Spanish)	•
Fitness and Health	30	• Exercise for 30 minutes. Choose from the Activity Calendars at the back of this packet	•
Arts	30	• Choose one or two activities from the Arts Activities at the back of this packet	•
TV Programs Websites	30	• Choose TV shows and websites to further your learning at home	•

Day 1 Reading and Writing

Vocabulary

Learn new vocabulary words from the Vocabulary List at the back of this packet. Practice using these words throughout the day.

Activity 1: *Reading*

- Select a true or non-fiction book to read. Review the parts of the book: Table of Contents, Title page, Glossary, Index, etc. Read the book and list 5 new facts that you learned by reading the book.

5 Facts I learned after reading _____(title of book).

1. _____

2._____

3._____

4._____

5._____

Activity 2: *Review the Parts of a Book*

- Match the words below to the correct meanings by writing the matching number on the correct line:

_____ Table of contents _____ Title page _____ Glossary _____ Index _____ Chapter heading	1. tells what each chapter is going to be about 2. tells words and their meanings 3. at the front of the book, lists the chapters and page numbers 4. at the back of the book, tells where to look for information 5. tells the title and author of the book

Day 1 Mathematics

Vocabulary

Learn the new math vocabulary words below. You will use these vocabulary words in the activities today.

- **Equation**: A math statement showing that two things are equal. (Same thing as equality.)
- **Fraction**: A fraction is a way to count part of something - like part of a pizza instead of the whole thing.
- **Decimal**: Decimal numbers are like fractions because they count PART of something.

Activity 1: *Number of the Day*

Following the instructions on the attached sheet. For each number of the day, try to find as many different ways to make the number as you can.

Activity 2: *Guess If You Can*

Follow the instructions on the attached sheet. Discuss what is meant by trial and error.

If you need Spanish activities for the concept of operations with numbers**,** please follow the steps below.

1. Go to tutorial site: http://destination.nycenet.edu

2. Login with the following user ID and PW:
   - User: studentnyc
   - Password: student

3. Click on the Exploration Icon to access the tutorial

4. Scroll down to Mastering Skills & Concepts: Course II – Spanish

5. Select the skill/concept to review.
   - Activity 1: 2.1.1 - Sums Less than 100

Notebook

In your notebook, please answer the following question:

- How many different ways could the number of the day be made?

Additional Activity

Do you have more time? If so, please complete the following activity.

- Junk mail (a mini project)

These activities are from:
http://athomewithmath.terc.edu/english_PDF/math_ENG_sect1.pdf
http://www.math.com/parents/articles/funmath.html

1

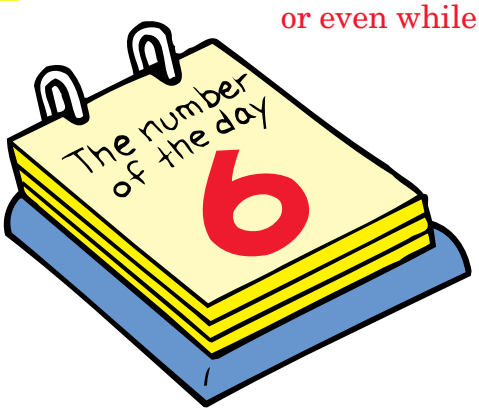
Number of the day

Materials

Paper and pencil (optional)

"The number of the day was 6. Sarita made 1 + 2 + 3. I did 24 ÷ 4. Dad's was 20 – 15 + 1, and Grandma said 4 x 25 – 80 – 14. She had to explain that one!"

You can use this activity to give your children lots of computation practice. Try it just about anywhere—on the bus, in the kitchen, or even while folding laundry.



Before you begin

Choose a number that you will call the "number of the day." The first time you do this activity, choose a number under 15.

1. Find one way to make the number of the day

Ask your children to think up different ways to make the number of the day, using equations.

"Let's all try to come up with different ways to make 11. Here's one way: 8 + 2 + 1 = 11. Can you find a different way?"

2. Collect everyone's equations

- If your children know how to write equations, they list their ideas and take turns reading them.
- When you're in the car, or if younger children need help, appoint one person "record keeper." As people give their ideas, the record keeper writes them down in equation form.
- When everyone's hands are busy making dinner, folding laundry, or pulling weeds, just take turns telling each other how you made the number—no writing is needed.

3. Find more ways to make the number

See how many different ways everyone can find to make the number of the day. You can offer specific challenges to give children practice with something they're doing in school, or just for variety.

For ages 5–7, try using ...

Addition with three numbers
1 + 3 + 7 = 11

Subtraction
13 - 2 = 11

Addition and subtraction
6 + 6 - 1 = 11

Coin values
2 nickels and 1 penny is 11 cents

For ages 7–9, try using ...

Pairs of the same number
2 + 2 + 3 + 3 + 1 = 11

Multiplication
4 x 5 - 9 = 11

Multiples of 5 and 10
25 + 15 - 30 + 1 = 11

The number 100
100 - (3 x 25) - 14 = 11

For ages 9–11, try using ...

A fraction or decimal
22 x .5 = 11

All four operations in one equation
(150 ÷ 10) x 3 - 40 + 6 = 11

Only one numeral
(33 - 3) ÷ 3 + (3 ÷ 3) = 11

The year you were born
1991 - 1900 - 80 = 11

Note: When an equation has parentheses, do the parts in parentheses first. To solve 100 - (3 x 25), first do 3 x 25, then subtract the result from 100.

When you repeat this activity

Family members can take turns choosing the number of the day. If you have young children, keep the number under 15. Otherwise, try a variety of numbers, including large ones (such as 312 and 50,429) and small ones (such as the day of the month, a child's age, or a fraction or decimal less than 1). Small numbers can be just as challenging as large ones.

Every now and then, ask children to explain their thinking: "How did you come up with 27 - 18 = 9? What was going through your head?" Be sure to explain your own thinking sometimes, too.

Talking about thinking is also a good way to handle mistakes. Children may notice and correct a mistake as they talk about how they arrived at the answer. If not, try to use their explanations as a basis for helping. For example, suppose a child says, "7 + 3 = 9 because 7, 8, 9—that's 3." You might respond, "Counting is a good way to do it. What's 1 more than 7? … OK, 8. What's 2 more?"

Variations

Use a starting number (ages 7–11)
Everyone's equations must start with the same number. For example, suppose the number of the day is 57 and you pick 10 as the starting number. Here are two possible equations:

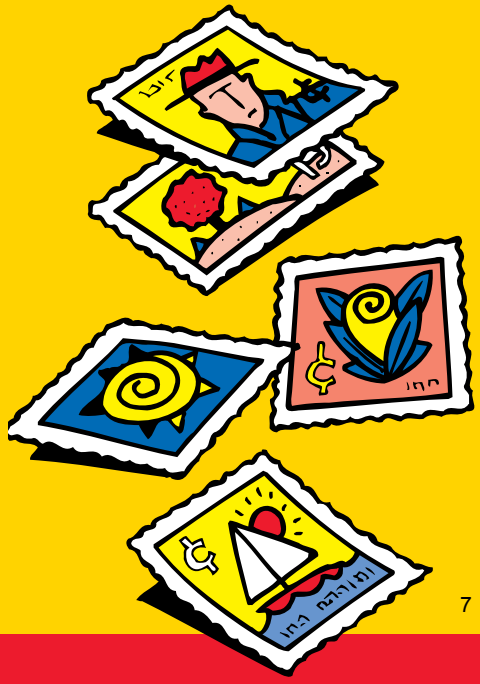
10 + 40 + 7 = 57

10 x 5 + 7 = 57

Stories about the number of the day (ages 5–11)
Make up story problems with the number of the day for the answer. For example, for the number 27:

"When we went for a walk yesterday, Ebony found 12 pretty stones. Bryce found 9, and I found 6. How many stones did we find in all?"

"I bought 4 books of postage stamps. Each one had 10 stamps. I used 13 stamps to mail party invitations. How many stamps did I have left?"



Guess If You Can

What to do

1. Let your child think of a number between a stated range of numbers while you try to guess the number by asking questions. Here is a sample conversation.
   Child: I am thinking of a number between 1 and 100.
   Parent: Is it more than 50?
   Child: No.
   Parent: Is it an even number?
   Child: No.
   Parent: Is it more than 20 but less than 40?
   Child: Yes.
   Parent: Can you reach it by starting at zero and counting by 3's?
   Child: Yes.
   (At this stage, your child could be thinking of 21, 27, 33, or 39.)

2. Figure out the answers to your own questions.
3. After you have guessed your child's number, let your child guess a number from you by asking similar questions.

Parent Pointer	
!	It is important to help children develop an understanding of the characteristics and meanings of numbers.

10 Junk mail (a mini project)

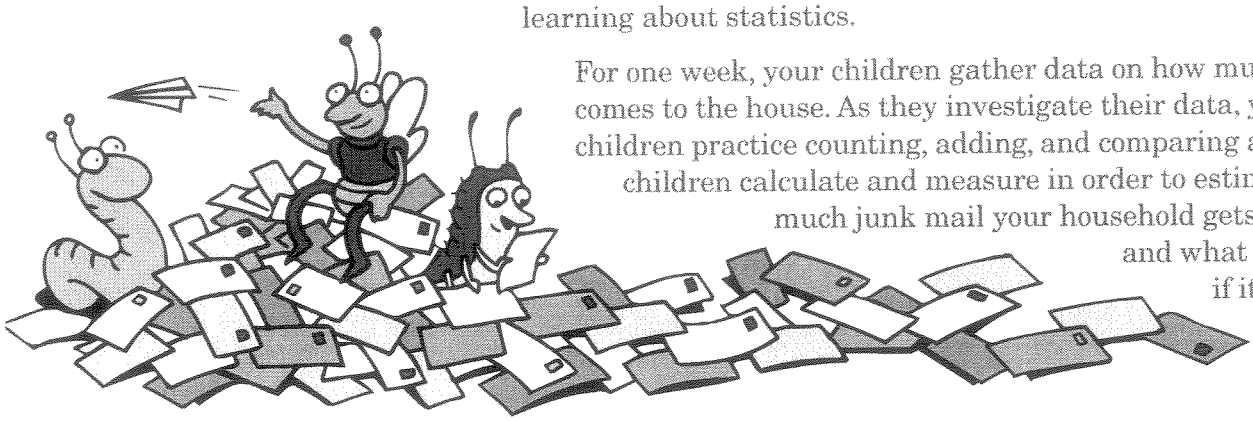
Materials

Your daily mail

"Lots of ads in the mail again—what a waste of paper! I wonder how much of this junk mail we get in a week? How much do we get in a whole year?"

Many children are interested in recycling and saving resources. In this activity, children investigate paper use (and paper waste) while learning about statistics.

For one week, your children gather data on how much junk mail comes to the house. As they investigate their data, younger children practice counting, adding, and comparing amounts. Older children calculate and measure in order to estimate just how much junk mail your household gets in a year—and what would happen if it all piled up!



Before you begin

Set the stage for the project by sorting today's mail and talking about junk mail.

"Let's sort today's mail. We'll put regular mail in one pile, junk mail in another. How much mail do you think we throw out every week without even reading it?"

Encourage your children to make some predictions.

Decide with your children what will count as junk mail: Will you count catalogs? Sweepstakes announcements? Coupons? Other advertisements? You may not be able to make all your decisions in advance, but it's important that everyone generally agrees what to count as "junk."

1. Count and keep track

Every day for a week, your children help sort the mail into two piles: junk mail and regular mail. After counting the number of pieces in each pile, they record the date, how much regular mail, how much junk mail, and the day's total. When they're done, they add the junk mail to the junk mail pile for the week.

Your children can record their data with a chart, graph, tally, or some other way. They can use something they learned in school, or they can come up with their own ways. With young children, it's fine for you to help with recording.

2. Investigate the data

Throughout the week, ask questions about the data your children are collecting. As the week goes on and the totals get larger, younger children may need help finding some of their answers.

"Is there more junk mail or regular mail today? How much more?"

"How much junk mail did we get so far this week? Did we get more junk mail or regular mail so far?"

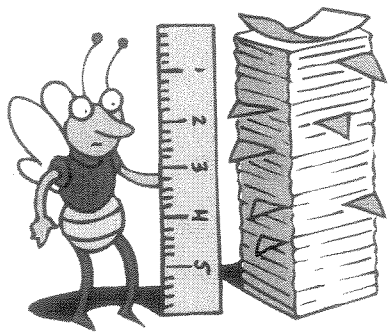
"How many pieces of mail did we get in all today? How many so far this week?"

Additional challenges for ages 7–11

"If we get the same amount of junk mail each week, how much will we have in a month? A year?"

"What fraction of the mail is junk mail? Is it more than half?"

Age range 5–11



"Measure the height of the pile of junk mail at the end of the week. If we let it stack up, how high would our pile of junk mail be in a month? In a year? Would the pile be taller than you are? Up to the ceiling? Taller than the building we live in?"

"If every house on our block (or every apartment in our building) got the same amount of junk mail as we did this week, how high would the pile of junk mail be?"

When you repeat this activity

Save the data you collected this week, then repeat the activity, perhaps at a different time of year. Compare your data.

"Do we get more junk mail during holiday seasons? At the start of the school year? Do we get more on certain days of the week? Why do you think so?"

Variations

More kinds of mail (ages 5–11)
Each day, sort the mail into several categories. You could try one of these ways:

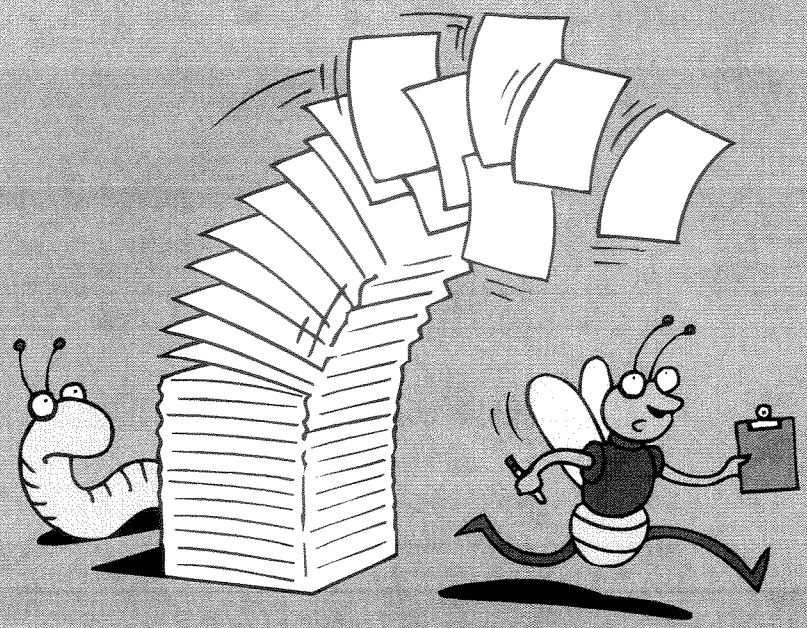
- Name it's addressed to (family member, "occupant" or "resident," former residents of your home)
- Where it's from (country, state, or region of the U.S.)
- Type of mail (bills, letters, magazines, junk mail)

Keep track of how many pieces you get in each category for a week. Then investigate your data.

"Who gets the most mail in the house?"

"About how far away does most of our mail come from—less than 50 miles away? Between 50 and 100? Between 100 and 1000? Over 1000 miles away?"

"Besides junk mail, what's the most common kind of mail we get? What percent of the total mail is this?"



Day 1 Science

Vocabulary

Learn the new vocabulary words below. You will use these vocabulary words in today's activity.

- **government (noun)**: the people who run a city, state, or country
- **solar panel (noun)**: a large sheet that takes in sunlight and makes it into electricity
- **tax break (noun)**: a cut in the amount of money a company must pay the government
- **technology (noun)**: the use of science to make new things
- **turbine (noun)**: a machine with fan-like blades that turn

Activity 1: *Green Energy Jobs (English or Spanish)*

- Read the article below and answer the questions that follow.
- Para Espanol, prime aquí: http://SCHOOLS.NYC.GOV/Documents/teachandlearn/LearnatHome/ELL/3day1sp.pdf

Printed by: Aron Persaud

Green Energy Jobs

AP Photo/Sandy Huffaker

NEWTON, Iowa (Achieve3000, February 2, 2008). "Green" energy is made from things that do not run out. Things like sunlight and wind are used to make green energy. Companies that make green energy are growing.

There may be 500,000 new "green collar" jobs by 2030. These workers will need to be skilled in green energy technologies. They will need to know how to make wind turbines and solar panels. They will need to know how to fix these things if they break.

Some companies are worried. They will need a lot more workers. Some think this is a good thing. In past few years, many workers have lost their jobs. Their companies closed because older technologies were used. Maybe the workers can find new jobs in green energy.

Workers will need training, though. This will be hard for companies. It will be hard to pay for training and still grow. Companies want the U.S. government to help. They want tax breaks. Oil companies already get such tax breaks. What if the government does not help? Energy jobs will go to workers in other countries.

Information for this story came from AP.

1. A wind turbine turns a set of gears. Gear A spins nine times in one second. Gear B spins three times in one second. Gear A spins _____ times as fast as gear B.
   A. 5
   B. 2
   C. 4
   D. 3

Day 1 Science (continued)

2. Which question is not answered by the news story?
   A. Why do the oil companies get tax breaks?
   B. What will green collar workers need to fix?
   C. Where does the new green energy come from?
   D. What do companies want from the government?

3. Which word means almost the same as government?
   A. Leaders
   B. Keepers
   C. Learners
   D. Starters

4. Let's say you are writing a summary of the news story. Which is most important to put in the summary?
   A. Energy jobs may go to other countries.
   B. Wind can be used to make green energy.
   C. Green energy will create many new jobs.
   D. Oil companies get government tax breaks

5. The news story says: "They will need to know how to make wind turbines and solar panels. They will need to know how to fix these things if they break." The author uses these sentences mostly to help the reader know _____.
   A. How wind turbines and solar panels are made
   B. What new things workers will need to know
   C. How workers will learn new technologies
   D. Why solar panels may need to be fixed

6. The news story says: "They will need to know how to fix these things if they break." Which must mean the opposite of break?
   A. Change
   B. Repair
   C. Discover
   D. Arrange

7. What is the main idea of this news story?
   A. Government tax breaks help companies grow.
   B. Solar panels and wind turbines often break.
   C. Growth in green energy is creating new jobs.
   D. Companies that use old technology are closing.

8. The news story does not say _____.
   A. Many green energy workers have lost jobs.
   B. New technology workers will make turbines.
   C. Sunlight and wind are used to make energy.
   D. Green energy companies will need workers.

Day 1 Science (continued)

9. What is the main problem talked about in the news story? What are ways to fix the problem? Use ideas from the news story to help you. Use your own ideas, too. Write your answer on the lines below.

Day 2 Schedule

Subject	Minutes Per Day (At Least!)	Assignments	What Did I Learn Today?
Reading and Writing	45	• Learn new vocabulary words from the Vocabulary List • Activity 1: Reading Fables • Activity 2: Write Your Own Fable	•
Math	45	Complete: • What's Fair? • Taking Turns	•
Science	30	• Lights Off Around the World (English or Spanish)	•
Fitness and Health	30	• Exercise for 30 minutes. Choose from the Activity Calendars at the back of this packet	•
Arts	30	• Choose one or two activities from the Arts Activities at the back of this packet	•
TV Shows and Websites	30	• Choose TV shows and websites to further your learning at home	•

Day 2 Reading and Writing

Vocabulary

Learn new vocabulary words from the Vocabulary List at the back of this packet. Practice using these words throughout the day.

Activity 1: *Reading Fables*

- Read the following fables by Aesop. A fable is a story that teaches a lesson. It can also be a short story with a moral, especially one in which the characters are animals.

As you read, underline the part of the story that reveals or tells the moral or the lesson in the story.

The Boy Who Cried Wolf

A shepherd-boy, who watched a flock of sheep near a village, brought out the villagers three or four times by crying out, "Wolf! Wolf!" and when his neighbors came to help him, laughed at them for their pains.

The Wolf, however, did truly come at last. The shepherd-boy, now really alarmed, shouted in an agony of terror: "Pray, do come and help me; the Wolf is killing the sheep;" but no one paid any heed to his cries, nor rendered any assistance. The Wolf, having no cause of fear, at his leisure lacerated or destroyed the whole flock.

There is no believing a liar, even when he speaks the truth.

The Ant and the Grasshopper

In a field one summer's day a Grasshopper was hopping about, chirping and singing to its heart's content. An Ant passed by, bearing along with great toil an ear of corn he was taking to the nest.

"Why not come and chat with me," said the Grasshopper, "instead of toiling and moiling in that way?"

"I am helping to lay up food for the winter," said the Ant, "and recommend you to do the same."

"Why bother about winter?" said the Grasshopper; "We have got plenty of food at present." But the Ant went on its way and continued its toil.

When the winter came the Grasshopper had no food and found itself dying of hunger - while it saw the ants distributing every day corn and grain from the stores they had collected in the summer. Then the Grasshopper knew: It is best to prepare for days of need.

Day 2 Reading and Writing (continued)

- Tell the most important part of a fable. Write it here.

Activity 2: *Write Your Own Fable*

- Write your own short story (fable) that teaches someone a lesson. As you create your story, think about the following:
  - What is the lesson you want your readers to learn
  - Who are the characters in your story?
  - How will your story end?

Day 2 Mathematics

Vocabulary

Learn the new math vocabulary words below. You will use these vocabulary words in the activities today.

- **Division**: A way to find out how many times one number is contained in another.
- **Remainder**: The remainder is what might be "left over" when you are doing a division problem.
- **Multiple**: A multiple is a number that is the product of a given number and some other number.

Activity 1: *What's Fair?*

- Follow the instructions on the attached sheet. Discuss what is meant by "fair share."

Activity 2: *Taking Turns*

- Follow the instructions on the attached sheet. What are some times when people need to take turns?

If you need Spanish activities for the concept of operation with numbers**,** please follow the steps below.

1. Go to tutorial site: http://destination.nycenet.edu
2. Login with the following user ID and PW:
   - User: studentnyc
   - Password: student
3. Click on the Exploration Icon to access the tutorial
4. Scroll down to Mastering Skills & Concepts: Course II – Spanish
5. Select the skill/concept to review:
   - Activity 2: 2.1.2 - Estimating and Finding Sums less than 1,000

Notebook:

In your notebook, please answer the following question:

- Why would it be important to share fairly and to take turns?

Additional Activity

Do you have more time? If so, please complete the following activity.

- Squash that Box

These activities are from:
http://athomewithmath.terc.edu/english_PDF/math_ENG_sect3.pdf
http://athomewithmath.terc.edu/english_PDF/math_ENG_sect4.pdf

3

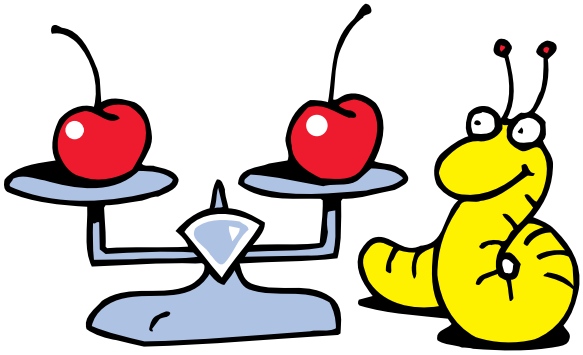
What's fair?

Materials

Between about 5 and 50 "countable" foods, like pancakes, crackers, or strawberries

"Cherries—yum! I want the exact same amount as Tulani!"

When it comes to favorite foods, everyone wants a "fair share." When your children ask you to "make it fair," ask them to figure out how to divide up the food so everyone gets the same amount. This involves using division, as well as counting, adding, subtracting, and multiplying—and sometimes even working with fractions.



1. Count to find how much food

Put the food to be shared on a plate so everyone can see it. If there are more than a few items, ask your children to make an estimate first:

"About how many cherries do you think we have? Let's count and see."

If necessary, help young children with the counting as the numbers get large.

2. Divide the total into equal parts

Remind your children of the number of items and the number of people to share them.

"So, there are 17 cherries and 3 of us. How many cherries should we give each person?"

For ages 5–7

Young children learn about division by working with actual things. Try asking them to deal out the food and count how many each person gets.

For ages 7–11

If your children need help, work with them in one of these ways.

Add up. *"What if we gave everyone 2 cherries? How many would that be? … What if we gave everyone 3 cherries? … 5 cherries? How many would be left over?"*

Subtract. *"If everyone gets 1 cherry, how many are left? … What if everyone gets 2 cherries? … 5 cherries? Can we give out 6 cherries to everyone?"*

Use multiplication or division facts. *"What if there were 15 cherries, how could you divide them into 3 equal shares? What's 15 ÷ 3? … Yes, everyone would get 5. That takes care of 15 of the cherries. How many are left over?"*

3. Decide what to do with the extras (optional)

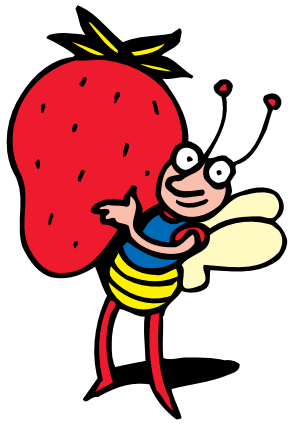
If there are any extras, discuss what to do with them: leave them for someone else? Break them into pieces and share the pieces?

If it makes sense to divide the extras into equal parts, you can do this as a way to bring up fractions. No one wants to divide that extra cherry into three equal parts, but you could easily divide other kinds of foods.

"How can we divide these two brownies up among the three of us?"

"There are seven pancakes left. How can we divide them up among the five of us?"

If your children aren't sure how to start, suggest dividing each extra item into equal parts for everyone. For example, to share two brownies among three people, cut each brownie into three equal parts, or thirds. How many of these thirds are there? How can they be shared?



4. Distribute the food

(This step won't be necessary if children dealt out the food as part of step 2.)

Ask your children to count out the actual items for each person. This is an ideal job for a young child if the numbers are small. If it's necessary, help them cut or break up the extras into equal parts. Before everyone eats, make sure there's agreement that the distribution of food is fair. If there's any disagreement, talk with them about what they think would be fair and why.

When you repeat this activity

Try different numbers of food items, and different numbers of people sharing. For more challenge, use larger amounts, and amounts that give you "extras." Encourage children to explain how they got their answers, and to check their work by finding the solution in a different way.

Variations

Working together (ages 5–11)

If there are two or more children, you can divide up this activity so each child is doing a different part: counting the items to be shared; checking the count; figuring out how many each person gets; and then counting out the equal shares.

Equal shares for some (ages 5-11)

Sometimes, people don't want the exact same amount. A younger child might not eat quite as much, or someone might not be very hungry.

Tell your children how much one or two people get, and ask them to figure out how to share the rest fairly among everyone else.

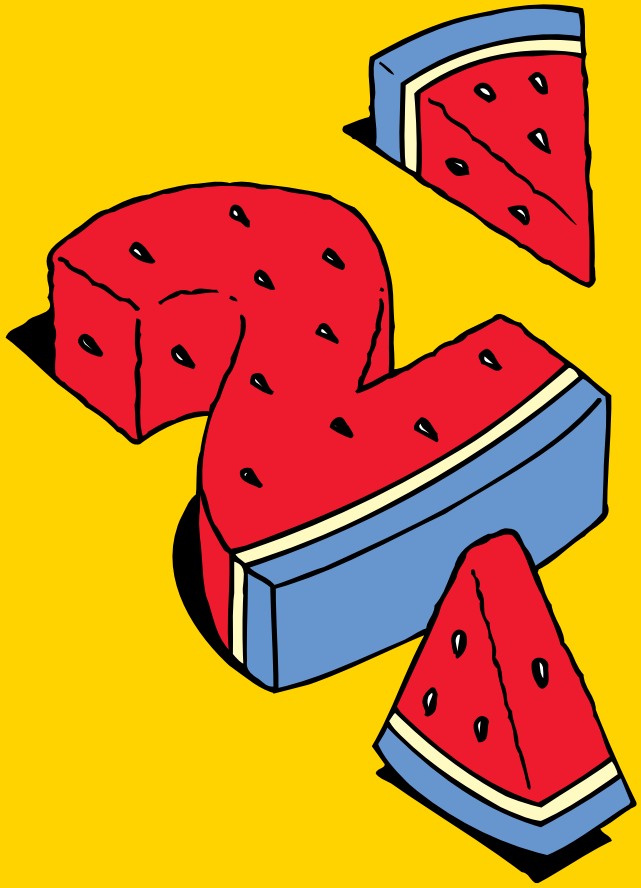
"There are 12 pancakes and 5 of us. Malia eats just one and Dad only wants two. How many will each of the rest of us get?"

Challenge older children with clues about uneven sharing.

"We have 10 crackers. Let's share them so that I get 2 less than you do. How many does each of us get?"

"There are 6 strawberries left. What if I get half as many as you do? How many will we each get?"

These problems can be difficult. Try one when there are just a small number of things to share.



4

Taking turns

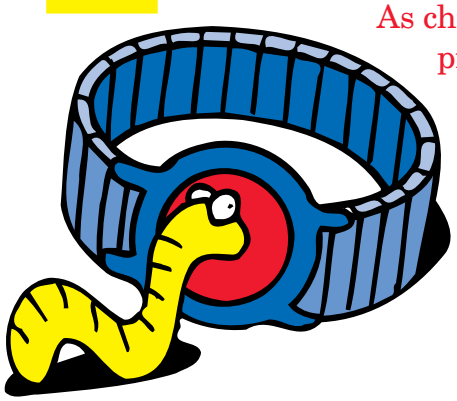
Materials

Clock or watch that displays minutes

"When will it be my turn to see that magazine? You said we could each take 10-minute turns!"

Taking turns is a big part of family life. Even if there's only one child in the family, adults sometimes need to take turns, too.

As children figure out when their turn begins, they get lots of practice with addition and time sense. They also have something to do when it's not their turn. You can do this activity just about anywhere—in the kitchen, waiting at the doctor's office, or on the bus.



Before you begin

Decide how long turns will be. Here are some ideas for children of different ages.

For ages 5–7

- take 1- to 3-minute turns, or
- take 10-minute turns and start turns on a multiple of 10 minutes (10:10 or 7:30).

For ages 7–9

- take turns of any number up to 10 minutes, or
- take turns of any multiple of 5 minutes (15, 20, 35).

For ages 9–11

- take turns that are not multiples of 5 or 10 minutes. Try turns of 13 minutes, 19 minutes, or 37 minutes.

1. Talk through the turn taking

Make sure your children know

- how long each turn is,
- what order they'll take turns in, and
- what time turn taking begins

"You all want to use stencils to make your pictures, but we can only find one stencil. So, each of you gets a 5-minute turn with it. Let's go around the table—Malique, you start. Tania's next, then Camille. Tania, keep an eye on the clock. It's 2:19 now—let us know when it's time for your turn!"

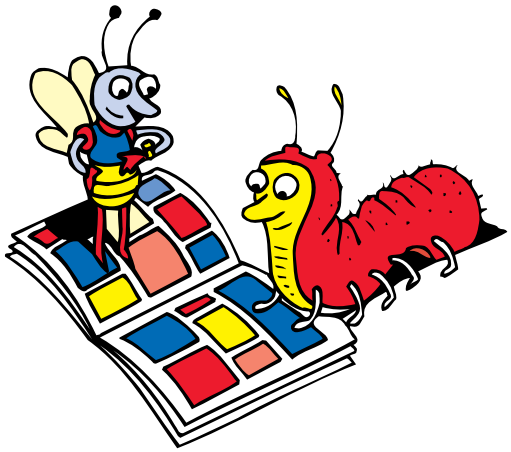
2. Figure out when the next turn begins

If your children need help, work with them in one of these ways:

Count up the minutes. One minute after 2:19 is 2:20, 2 minutes after is 2:21, … 5 minutes after is 2:24.

Round to a "familiar" time, then adjust. The last turn began at 2:19, so you can round up to 2:20. The next turn would begin 5 minutes later, at 2:25. Since the turn really began 1 minute earlier—at 2:19, the next turn begins 1 minute earlier, too—at 2:24.

Talk through your own solution. Children who aren't sure what to do, but know their turns are approaching fast, may not be eager to work out the math themselves. Explain how you know when the next turn begins. Even if your children can't



understand everything, they'll appreciate that you're doing math to find out something important to them. Next time, try a turn length that you think will be easier. You can even make it "too easy," to give a feeling of success so children will be ready to try more challenge another time.

When you repeat this activity

Vary the turn length and starting time. Try turns of a few minutes and turns of a half hour or more. Try starting the first turn on the hour, at half-past, and at any old time. As you learn what your children can figure out easily, choose times that offer just a little challenge.

Variations

How long until our turn? (ages 7–11)

Waiting in line can be unpredictable. When we're in a check-out line, at the bank, or at the post office, we don't know how long each person's turn with the cashier or clerk will be. Try this to pass the time when you're waiting.

If you have a watch, time the turns of three or four people ahead of you and find an average. Or, just estimate the length of an average turn. Then, use this average to predict how long until your turn.

Exploring patterns (ages 5–11)

Write down when each person's turn will start, continuing for at least 12 or 15 turns. (It's OK if no one really gets that many turns.) Then, look for patterns in the numbers.

For example, suppose the starting time is 4:12 and you have 5-minute turns.

4:12	4:37	5:02
4:17	4:42	5:07
4:22	4:47	5:12
4:27	4:52	5:17
4:32	4:57	

Some patterns: the "ones" digits in the minutes are all 2 and 7; the "tens" digits appear twice and then increase by 1.

Here's another example: the starting time is 1:00, with 3-minute turns.

1:00	1:15	1:30
1:03	1:18	1:33
1:06	1:21	1:36
1:09	1:24	1:39
1:12	1:27	

Some patterns: the minutes are multiples of 3; they alternate even and odd; the "ones" digit repeats every 10th number.

Squash That Box

Ever notice what happens when you flatten cereal boxes, tin cans, or other 3-dimensional shapes for recycling? Or do you ever wonder how they design and make all those interesting containers you find in the department store? Mathematicians call the flat, unfolded designs of 3-dimensional shapes "nets."

What you'll need

Small cardboard boxes, aluminum cans, and cardboard tubes from toilet paper or paper towels

What to do

1. Explain to your child that when we recycle materials, we need to flatten them. Ask him or her why (to save space). Ask your child to imagine what shapes will be created when you flatten the boxes or cans. Some people crush cans, which is not the same as flattening. When you take apart a cylinder, you have two circles for the ends and the flat cylinder makes a rectangle. Cut a cardboard tube lengthwise. What shape do you see (a rectangle)? What will a cereal box look like if you carefully unfold it and cut along the edges?
2. Unfold a cardboard box, without showing your child the original box. Ask your child to imagine what the original box looked like. What shape will it be when it is put back together? How will the ends look?
3. Have your child trace all the faces of a box or other 3-dimensional shapes by laying every side and top and bottom on the paper to be traced. Ask the child the names of the drawn 2-dimensional shapes.
4. Have your child study a box. Then see if your child can draw a net (the unfolded version) of the box. Unfold the box to see how closely the drawn net corresponds to the actual net. What would the net of a pyramid look like? What would the net of a cube look like?

Here is the net of a cube.

Here is the net of a cylinder.

Parent Pointer
! Recognizing 2-dimensional shapes in 3-dimensional objects and visualizing shapes are essential skills in fields as varied as architecture, manufacturing, medicine, and design.

Day 2 Science

Vocabulary

Learn the new vocabulary words below. You will use these vocabulary words in today's activity.

- **atmosphere (noun)** gases surrounding the earth
- **campaign (noun)** a plan put together to make something happen
- **climate change (noun)** a change in the Earth's weather over time
- **dim (verb)** to get or make darker
- **environmental (adjective)** having to do with keeping the air, water, and all life safe from harm

Activity 1: *Lights Off Around the World*

- Read the article below and answer the questions that follow.
- Para Espanol, prime aquí: http://SCHOOLS.NYC.GOV/Documents/teachandlearn/LearnatHome/ELL/3day2sp.pdf

Printed by: Aron Persaud

Lights Off Around the World

AP Photo/Charles Rex Arbogast

SYDNEY, Australia (Achieve3000, April 17, 2008). On Saturday, March 29, the Sydney Opera House went dark. So did Chicago's Sears Tower. Why? They were taking part in Earth Hour. It is a worldwide campaign. The campaign hopes to get people to think about possible climate change.

Earth Hour was started by an environmental group in 2007. The group asked people and companies to turn off their lights. They asked that people use candle power for at least 60 minutes. It started at 8 p.m., wherever people lived. Why was this important? Scientists say that electric plants give off gases. These gases remain in the atmosphere. Then, they trap sunlight. This, some scientists say, helps cause climate change. Earth Hour leaders hoped that 100 million people would turn off their lights for the hour. This would lower electricity use.

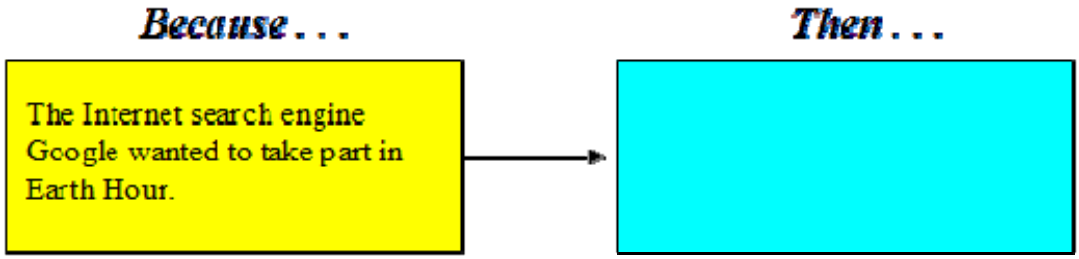
Earth Hour first took place in Australia last year. This year, more of the world took part. It started in the South Pacific. Then, it reached Europe. Finally, it spread to North America.

People around the U.S. took part in Earth Hour. In Chicago, Illinois, lights on more than 200 downtown buildings were dimmed. In San Francisco, California, lights on the Golden Gate Bridge, Coit Tower, and other places were turned off for an hour.

Many other places on Earth took part in Earth Hour, too. So did Internet search engine Google. What did it do? It blackened its usually white home page. The page read, "We've turned the lights out. Now it's your turn."

Information for this story came from AP.

Day 2 Science (continued)



1. Think about the news story. Which fits best in the empty box above?
   A. It blackened its usually white home page.
   B. It dimmed all the lights in its building.
   C. It used candle power for 60 minutes.
   D. It trapped sunlight in the air.

2. What is this news story mainly about?
   A. On March 29, Google dimmed its home page.
   B. Gases in the atmosphere may help cause climate change.
   C. On March 29, many places turned off their lights for Earth Hour.
   D. Some say that electric plants give off gasses that can remain in the atmosphere.

3. Let's say you are writing a summary of the news story. Which is most important to put in the summary?
   A. San Francisco, California, turned off the lights on the Golden Gate Bridge.
   B. Earth Hour hopes to get people to think about possible climate change.
   C. Chicago, Illinois, dimmed the lights on over 200 buildings.
   D. Earth Hour first took place in Australia last year.

4. The news story says: "Scientists say that electricity plants give off gases. These gases remain in the atmosphere. Then, they trap sunlight. This, some scientists say, helps cause climate change. Earth Hour leaders hoped that 100 million people would turn off their lights for the hour. This would lower electricity use. Look at these sentences and think about the news story." The opposite of lower must be _____.
   A. Prepare
   B. Stop
   C. Teach
   D. Raise

5. Which of these is an opinion? *Hint*: An opinion tells what a person thinks or feels. Others may not think this is right.
   A. Earth Hour was started in 2007 in Australia.
   B. More people should take part in the Earth Hour next year.
   C. Earth Hour was started by an environmental group.
   D. Some different places on Earth took part in Earth Hour this year.

6. Think about the news story. How was Earth Hour in 2007 different from Earth Hour this year?
   A. Last year, Earth Hour started at 8 p.m., but last year it started early in the morning.
   B. Last year, Earth Hour was talked about on Google's home page, but this year it wasn't.
   C. Last year, Earth Hour saved people a lot of money, but it saved less money this year.
   D. Last year, Earth Hour was held only in Australia, but this year it took place all over the world.

Day 2 Science (continued)

7. The news story says: “These gases remain in the atmosphere.” Which means almost the same as atmosphere?
   A. Air
   B. Tower
   C. School
   D. Building

8. The news story says all of these except _____.
   A. Many places on Earth took part in Earth Hour.
   B. Earth Hour was started by an environmental group.
   C. Many schools in the U.S. turned off lights for Earth Hour 2008.
   D. Earth Hour leaders hoped that 100 million people would turn off their lights.

9. Think about Earth Hour. How was this year's event different from the one held last year? Look at the news story for ideas. You can use ideas of your own, too. Write your answer on the lines below.

Day 3 Schedule

Subject	Minutes Per Day (At Least!)	Assignments	What Did I Learn Today?
Reading and Writing	45	• Learn new vocabulary words from the Vocabulary List • Activity 1: Read a Fairy Tale • Activity 2: Retell the Story • Activity 3: Write a Letter	•
Math	45	Complete • How Much Longer? • When Should We Leave?	•
Science	30	• Power Walking (English or Spanish)	•
Fitness and Health	30	• Exercise for 30 minutes. Choose from the Activity Calendars at the back of this packet	•
Arts	30	• Choose one or two activities from the Arts Activities at the back of this packet	•
TV Shows and Websites	30	• Choose TV shows and websites to further your learning at home	•

Day 3 Reading and Writing

Vocabulary

Learn new vocabulary words from the Vocabulary List at the back of this packet. Practice using these words throughout the day

Activity 1: *Read a Fairy Tale*

- Read the following fairy tale: "The Frog Prince**,"** by the Brothers Grimm

One fine evening a young princess put on her bonnet and clogs, and went out to take a walk by herself in a wood; and when she came to a cool spring of water with a rose in the middle of it, she sat herself down to rest a while. Now she had a golden ball in her hand, which was her favorite plaything; and she was always tossing it up into the air, and catching it again as it fell.

After a time she threw it up so high that she missed catching it as it fell; and the ball bounded away, and rolled along on the ground, until at last it fell down into the spring. The princess looked into the spring after her ball, but it was very deep, so deep that she could not see the bottom of it. She began to cry, and said, 'Alas! if I could only get my ball again, I would give all my fine clothes and jewels, and everything that I have in the world.'

Whilst she was speaking, a frog put its head out of the water, and said, 'Princess, why do you weep so bitterly?'

'Alas!' said she, 'what can you do for me, you nasty frog? My golden ball has fallen into the spring.'

The frog said, 'I do not want your pearls, and jewels, and fine clothes; but if you will love me, and let me live with you and eat from off your golden plate, and sleep on your bed, I will bring you your ball again.'

'What nonsense,' thought the princess, 'this silly frog is talking! He can never even get out of the spring to visit me, though he may be able to get my ball for me, and therefore I will tell him he shall have what he asks.'

So she said to the frog, 'Well, if you will bring me my ball, I will do all you ask.'

Then the frog put his head down, and dived deep under the water; and after a little while he came up again, with the ball in his mouth, and threw it on the edge of the spring.

As soon as the young princess saw her ball, she ran to pick it up; and she was so overjoyed to have it in her hand again, that she never thought of the frog, but ran home with it as fast as she could.

Day 3 Reading and Writing (continued)

The frog called after her, 'Stay, princess, and take me with you as you said,'

But she did not stop to hear a word.

The next day, just as the princess had sat down to dinner, she heard a strange noise - tap, tap - plash, plash – as if something was coming up the marble staircase, and soon afterwards there was a gentle knock at the door, and a little voice cried out and said:

'Open the door, my princess dear,

Open the door to thy true love here!

And mind the words that thou and I said

By the fountain cool, in the greenwood shade.'

Then the princess ran to the door and opened it, and there she saw the frog, whom she had quite forgotten. At this sight she was sadly frightened, and shutting the door as fast as she could came back to her seat.

The king, her father, seeing that something had frightened her, asked her what was the matter.

'There is a nasty frog,' said she, 'at the door, that lifted my ball for me out of the spring this morning. I told him that he should live with me here, thinking that he could never get out of the spring; but there he is at the door, and he wants to come in.'

While she was speaking the frog knocked again at the door, and said:

'Open the door, my princess dear,

Open the door to thy true love here!

And mind the words that thou and I said

By the fountain cool, in the greenwood shade.'

Then the king said to the young princess, 'As you have given your word you must keep it; so go and let him in.'

She did so, and the frog hopped into the room, and then straight on - tap, tap - plash, plash - from the bottom of the room to the top, till he came up close to the table where the princess sat.

'Pray lift me upon chair,' said he to the princess, 'and let me sit next to you.'

As soon as she had done this, the frog said, 'Put your plate nearer to me, that I may eat out of it.'

This she did, and when he had eaten as much as he could, he said, 'Now I am tired; carry me upstairs, and put me into your bed.' And the princess, though very unwilling, took him up in her hand, and put him upon the pillow of her own bed, where he slept all night long.

As soon as it was light the frog jumped up, hopped downstairs, and went out of the house.

'Now, then,' thought the princess, 'at last he is gone, and I shall be troubled with him no more.'

Day 3 Reading and Writing (continued)

But she was mistaken; for when night came again she heard the same tapping at the door; and the frog came once more, and said:

Open the door, my princess dear,
Open the door to thy true love here!
And mind the words that thou and I said
By the fountain cool, in the greenwood shade.'

And when the princess opened the door the frog came in, and slept upon her pillow as before, till the morning broke. And the third night he did the same. But when the princess awoke on the following morning she was astonished to see, instead of the frog, a handsome prince, gazing on her with the most beautiful eyes she had ever seen and standing at the head of her bed.

He told her that he had been enchanted by a spiteful fairy, who had changed him into a frog; and that he had been fated so to abide till some princess should take him out of the spring, and let him eat from her plate, and sleep upon her bed for three nights.

'You,' said the prince, 'have broken his cruel charm, and now I have nothing to wish for but that you should go with me into my father's kingdom, where I will marry you, and love you as long as you live.'

The young princess, you may be sure, was not long in saying 'Yes' to all this; and as they spoke a brightly colored coach drove up, with eight beautiful horses, decked with plumes of feathers and a golden harness; and behind the coach rode the prince's servant, faithful Heinrich, who had bewailed the misfortunes of his dear master during his enchantment so long and so bitterly, that his heart had well-nigh burst.

They then took leave of the king, and got into the coach with eight horses, and all set out, full of joy and merriment, for the prince's kingdom, which they reached safely; and there they lived happily a great many years.

- What is this story about?
- Did the ending surprise? Explain why not?

Day 3 Reading and Writing (continued)

Activity 2: *Retell the Story*

- Use the ten lines below to retell the story in your own words and in order from beginning to end. Use words like first, next, then, finally.

1._____

2._____

3._____

4._____

5._____

6._____

7._____

8._____

9._____

10._____

Day 3 Reading and Writing (continued)

Activity 3: *Write a Letter*

- Write a letter to a character from The Frog Prince below:

Dear_____,

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____,

_____

Day 3 Mathematics

Vocabulary

Learn the new math vocabulary words below. You will use these vocabulary words in the activities today.

- **Calculate**: To find the value of something, usually by using arithmetic, like adding or multiplying.
- **Rounding**: To express something in a way that is about the same, but in a form that is easier to use.
- **Solution**: The answer to a problem.

Activity 1: *How Much Longer?*

- Follow the instructions on the attached sheet. Why would this question always have different answers?

Activity 2: *When Should We Leave?*

- Follow the instructions on the attached sheet. Why would it be important to calculate when to leave?

If you need Spanish activities for the concept of operation of numbers**,** please follow the steps below.

1. Go to tutorial site: http://destination.nycenet.edu

2. Login with the following user ID and PW:
   - User: studentnyc
   - Password: student

3. Click on the Exploration Icon to access the tutorial

4. Scroll down to Mastering Skills & Concepts: Course II – Spanish

5. Select the skill/concept to review:
   - Activity 3: 2.1.3 - Differences within 100

Notebook:

In your notebook, please answer the following question:

- Why is it sometimes easier to round off to the nearest quarter- or half-hour?

Additional Activity

Do you have more time? If so, please complete the following activity.

- What are the Coins?

These activities are from:
http://athomewithmath.terc.edu/english_PDF/math_ENG_sect5.pdf
http://athomewithmath.terc.edu/english_PDF/math_ENG_sect6.pdf

5

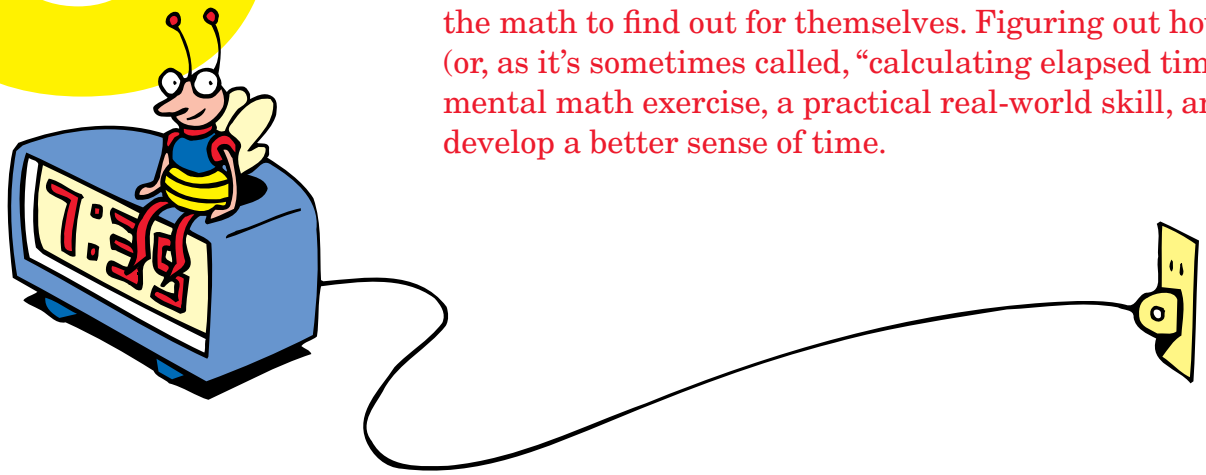
How much longer?

Materials

Clock or watch that displays minutes

"How much longer until the soccer game begins? … How long until we eat? … How much longer before the movie starts?"

Next time your children ask you "How much longer?" ask them to do the math to find out for themselves. Figuring out how much longer (or, as it's sometimes called, "calculating elapsed time") is a great mental math exercise, a practical real-world skill, and a way to develop a better sense of time.



1. Talk through the problem

Make sure your children know what time it is now and the time of the event they're waiting for.

Child: *"How long until we eat?"*

Parent: *"It's 5:18. Dinner's at 6. How many minutes until 6?"*

For ages 5–7, simplify the problem by rounding times to the nearest half hour (5:30 in this example), quarter hour (5:15), or 10 minutes (5:20).

2. Figure out how much longer

If your children need help, work with them to solve the problem in one of these ways:

Break the problem into parts. For instance, from 5:18 to 5:20 is 2 minutes, then it's 10 more minutes to 5:30, and another 30 to 6:00—42 minutes in all.

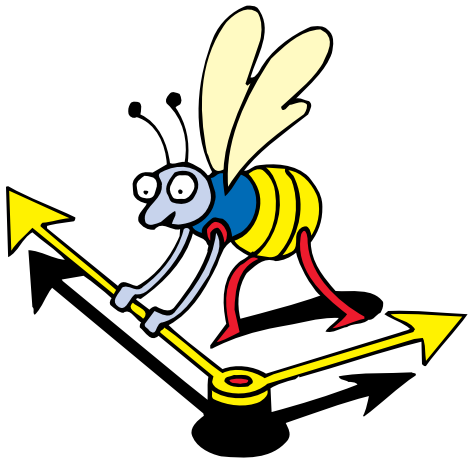
Round to a time that's easier to work with and then adjust. It's 45 minutes from 5:15 to 6:00, so it's 3 less than that—42 minutes—from 5:18 to 6:00.

Count up by ten-minute intervals. From 5:18 to 5:28 is 10 minutes. From 5:18 to 5:38 is 20 minutes, to 5:48 is 30, to 5:58 is 40, plus 2 minutes takes us to 6:00. So it's 42 minutes in all.

3. Explain solutions

If your children solved the problem without help, ask how they got their answers.

If you notice any incorrect calculations, encourage your children to explain their thinking further. They may fix their mistakes as they talk about how they got the answer. If they don't, try to help them correct their solution methods, rather than showing a new way to solve the problem.



4. What could you do in the remaining time? (optional)

To help develop a "real-life" understanding of time, ask about what could be done in the time that's left.

"So, you have about 40 minutes left until dinner. Is that enough time to clean your desk? Your whole room? Your whole room and still have some time left to play?"

When you repeat this activity

Try this when "How much longer?" is a few minutes, close to an hour, or several hours. Ask your children to explain their thinking from time to time—both when they make mistakes and when they arrive at the right answer. Otherwise, they will come to think that "How did you get your answer?" really means, "You're wrong."

Variations

Predict how much longer (ages 5–11)

Sometimes we don't have an answer for "How much longer?" We're not sure when the waitress will take our order, or when the food will arrive. We don't know how long we'll be in the check-out line, or when we'll get home if we're stuck in traffic. In situations like these, ask everyone to predict how much longer, and to explain why they think their predictions are reasonable. Write down (or remember) your predictions, and assign someone to keep track of the time. Which prediction comes closest?

For more challenge, after children make their predictions, suggest they calculate what time that will be.

"It's 3:32, and you guess it will take 45 minutes to get home. What time will it be then?"

When the wait is prolonged, ask if anyone wants to revise their predictions.

"We predicted we'd be through the check-out line in 5 minutes, but 3 minutes have passed and the person ahead of us hasn't unloaded everything from her cart yet. Do you still think we'll be through in 5 minutes, or do you want to change your predictions?"

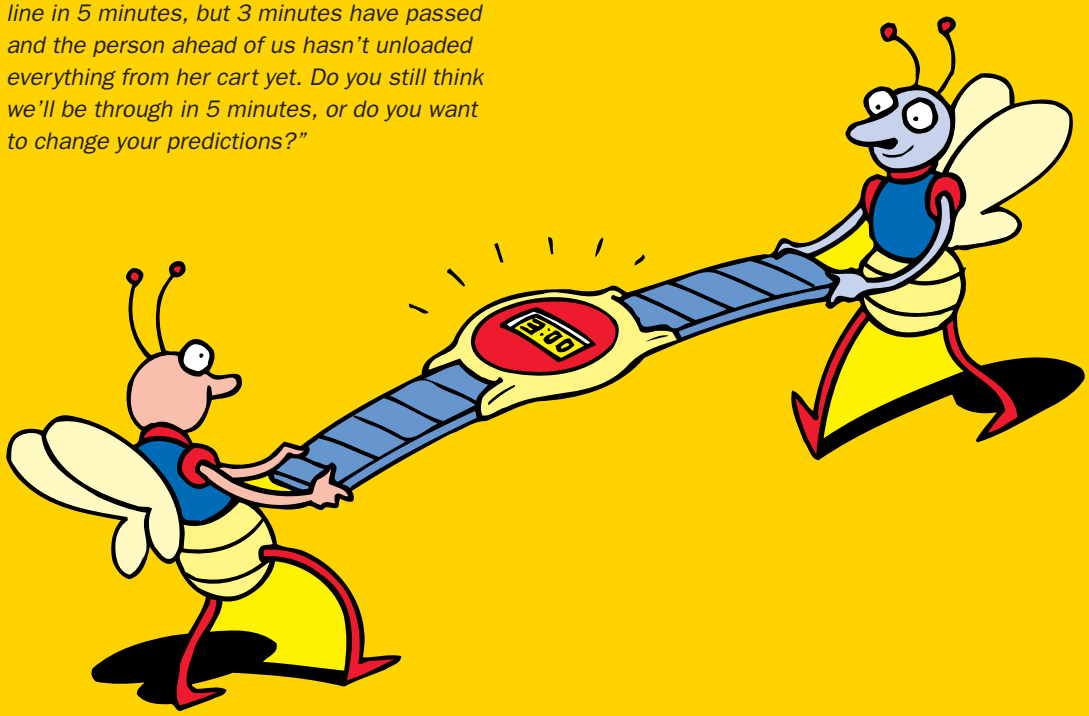
When it seems like forever (ages 5–11)

When there's an exciting event coming up soon, ask your children to find out "how much longer" in weeks, days, or hours. Younger children can use a calendar to count how many days (or weeks). Older children can calculate how many hours until the event, and then explore questions like these:

What is the halfway point? *"When will it be halfway between now and your birthday? What will you be doing then?"*

How many minutes? *"So, you figured out that it's 63 hours until your school play. Do you think that's more than 1000 minutes from now? More than 10,000? How can you find out?"*

How long ago? *"The big soccer game is in 32 hours, and it seems like you have to wait forever! What were you doing 32 hours ago? Does it seem like that long ago?"*



6

When should we leave?

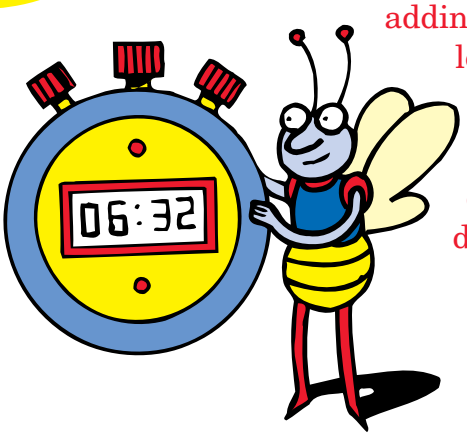
Materials

- Clock or watch that displays minutes
- Pencil and paper (optional)

"Oh no, it's almost 12:35! We'll never get to the soccer field by 1:00!"

Some days it seems that everyone is rushing off somewhere—to school, to work, to appointments. As we plan the day, we need to decide when to leave in order to get places on time—even if we don't always quite make it. Deciding when to leave requires lots of math: adding and subtracting times, using time sense to estimate how long it takes to go places, and using timetables.

In this activity, as children figure out when to leave, they learn about the role math plays in scheduling the day. Finding when to leave also gives them something to do while they're waiting around to go!



1. Talk through the trip

Make sure your children know

- the time you need to arrive at your destination.
- the parts of the trip—will you walk directly there? Walk to the bus stop, wait, ride the bus, and then walk the rest of the way?
- how long each part of the trip takes. It's OK to round times to the nearest 10 or 15 minutes.

"We're driving Ana to school. It's a 15-minute ride to Ana's house, and then it takes about 20 minutes to get to school. We need to be there for the 8:10 bell. When should we leave?"

For ages 5–7

Ask about trips with just one part.

"It takes half an hour to walk to Grandma's house. We need to be there at 3:00. When should we leave?"

Or, combine parts of the trip, so children have fewer things to keep track of.

"It will take about 35 minutes to get to school. When should we leave?"

2. Figure out when to leave

If your children get stuck, work with them in one of these ways:

Calculate how long the trip is, then subtract the travel time from your intended arrival time. The trip takes 15 + 20, or 35 minutes. Thirty-five minutes before 8:10 is 7:35.

Work backwards, one step at a time. To get to school at 8:10, we need to leave Ana's house 20 minutes earlier. That's 7:50. So, we should leave home 15 minutes before then—at 7:35.

Pick a time when you might start, and then adjust. Some children find it easier to work with a specific starting time.

"What if we left at 7:45—when would we get there? … Should we leave earlier or later than that? … How much earlier (or later)?"

Keep the focus on the goal. Sometimes when we get bogged down in calculations, we lose sight of what we're trying to figure out. Remind children of the basic question as needed.

"So you figured out that it will take us about 35 minutes in all. When should we leave so that we get there at 8:10?"

Take off the pressure if it's getting to be time to go. You can spend a bit of travel time explaining how you figured out when to leave. Next time, ask your children to figure out, "When should we leave?" when the trip is simpler.

When you repeat this activity

Try this with a variety of trips—trips under half an hour, and trips of 2 hours or longer; trips involving several stops, bus changes, or errands; and trips involving different methods of transportation. For more challenge, involve your children in planning ahead for possible traffic or other delays.

"We have to take two buses. Each ride could take anywhere from 15 to 30 minutes, depending on traffic, and we could wait up to 10 minutes when we change buses. How much time should we allow, in case there's a lot of traffic and a long wait? What's the earliest we could get there? If we're early, will there be enough time to get ice cream on the way?"

Variations

Use timetables (ages 7–11)

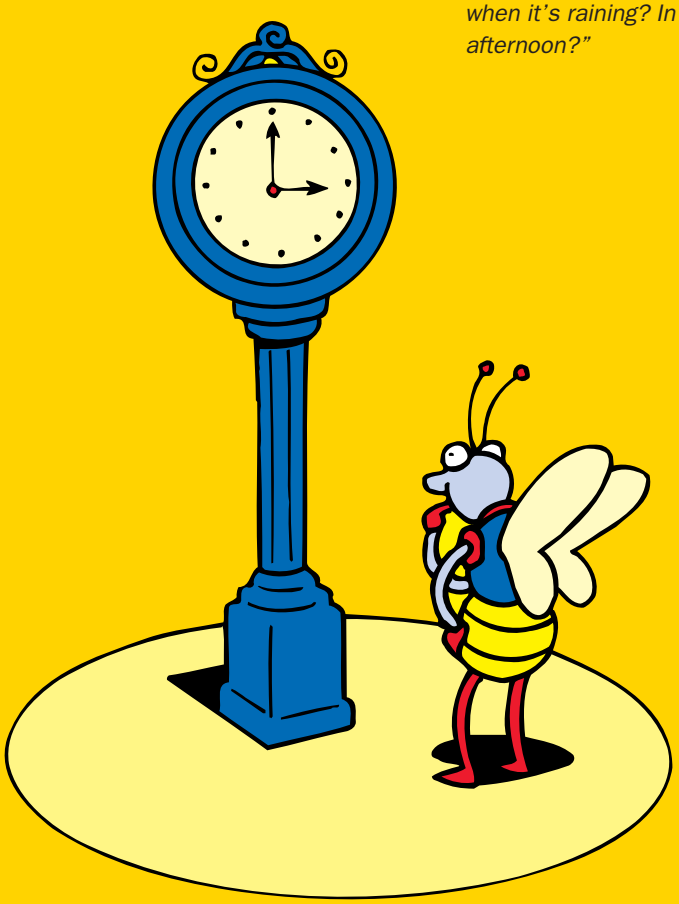
Sometimes, figuring out when to leave involves choosing which bus (or train, or ferry) to take. Work with your child to use a timetable to plan your trip.

"We have to be at the doctor's at 4:00. The bus stops at North Square just around the corner from the doctor's office. Let's look at the schedule to find a bus that gets there by 3:50. OK, the 3:02 from the Oak Street stop should get us in by 3:43. What time do we need to leave home to catch the 3:02 bus at Oak Street?"

How long did it take? (ages 7–11)

Find a trip that your children take on a regular basis—perhaps a drive to the grocery store, a bus to the library, or a trip by foot and subway to Grandma's house. Each time they take this same trip (for at least a few trips), ask them to use a watch or timer to find how long it takes. Provide a notebook or special paper where they can record how long the trip took, along with the date and day of the week, the time of day, the weather, and any circumstances they think affected the length of the trip (such as delays for road construction). They can use these data to help make decisions about when to leave on future trips.

"How much time should we allow for the trip when it's raining? In rush hour? On Sunday afternoon?"



What Are the Coins?

What you'll need

Some coins

What to do

Ask your child the following questions:

1. I have three coins in my pocket. They are worth 7 cents. What do I have? (a nickel and 2 pennies)
2. I have three coins in my pocket. They are worth 16 cents. What do I have? (a dime, a nickel, a penny)
3. I have three coins in my pocket. They are worth 11 cents. What do I have? (2 nickels and 1 penny)
4. I have three coins in my pockets. They are worth 30 cents. What do I have? (3 dimes)
5. I have six coins in my pocket. They are worth 30 cents. What could I have? (1 quarter and 5 pennies or 6 nickels). This problem has more than one answer. It is challenging for children to experience problems like this.
6. I have coins in my pocket, which have a value of 11 cents. How many coins could I have?

You get the idea! Give your child a few coins to figure out the answers.

Parent Pointer	
!	Use this activity to help your child develop an understanding of patterns and variables (the unknown) to solve a problem. This is critical to understanding algebra.

Day 3 Science

Vocabulary

Learn the new vocabulary words below. You will use these vocabulary words in today's activity.

- **artificial joint (noun):** a part that is put inside someone's body to take the place of a hurt joint, such as a knee or hip
- **device (noun):** a thing made to do something
- **electrical power (noun)**: something used to run cell phones, radios, and other things
- **generator (noun)**: a machine that changes one kind of energy or power into another
- **knee brace (noun)**: something worn on the knee, often to make the leg stronger

Activity 1: *Power Walking (English or Spanish)*

- Read the article below and answer the questions that follow.
- Para Espanol, prime aquí: http://SCHOOLS.NYC.GOV/Documents/teachandlearn/LearnatHome/ELL/3day3sp.pdf

Printed by: Aron Persaud

Power Walking

AP Photo/Simon Fraser University,
Greg Ehlers

WASHINGTON, D.C. (Achieve3000, April 4, 2008). Has your cell phone ever died? Now, you could power it just by walking. How? You could use a special knee brace. The brace makes electrical power from the swing of someone's knee.

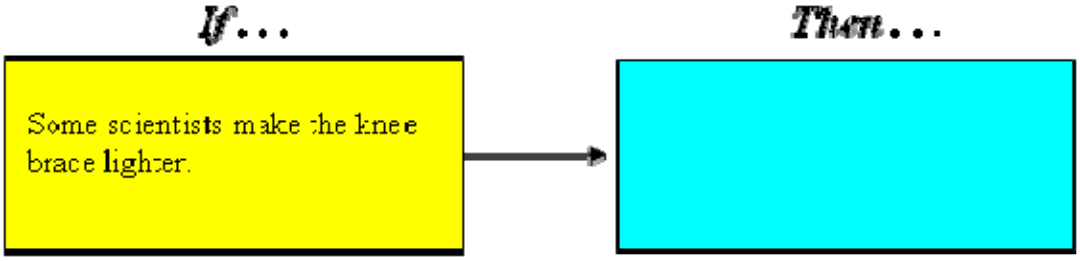
How does the knee brace work? People put one of the knee braces on each leg. Each knee brace has a generator inside. Then, the people start walking. Each step takes energy to move the leg back and forth. As the leg moves, the knee brace's generator "catches" this energy. Then, the generator changes the energy into electricity.

This electricity could be used to power different devices. One minute of walking could power a cell phone for 10 minutes. The generator could also be used to power artificial joints. Scientists will probably try that next.

Still, some people think that the knee brace could be better. Right now, it weighs 3 ½ pounds. Some scientists want to make the brace lighter. That way, it will be more comfortable to wear. Then, maybe more people will want to use it.

Information for this story came from AP.

Day 3 Science (continued)



1. Think about the news story. Which fits best in the empty box above?
   A. The knee brace will be more comfortable to wear.
   B. The knee brace can be worn by small animals.
   C. The knee brace will make more electricity.
   D. The knee brace can be sold for less money.

2. This news story talks mainly about _____.
   A. How a generator changes energy into different kinds of power
   B. A knee brace that makes electricity when people walk
   C. How much electricity it takes to power a cell phone
   D. The best way to power artificial joints

3. Which of these is not talked about in the news story?
   A. Each knee brace has a generator inside.
   B. A cell phone could be powered just by walking.
   C. Most people have new cell phones that never die.
   D. Scientists want to make the knee brace more comfortable.

4. Which of these is an opinion? Hint: An opinion tells what a person thinks or feels. Others may not think this is right.
   A. People can put a leg brace on each knee.
   B. The knee brace has a generator inside of it.
   C. Each step takes energy to move the leg back and forth.
   D. More people should power their cell phones with a knee brace.

5. The news story says: "The electricity could be used to power different devices." Which word means almost the same as device?
   A. Tool
   B. Calendar
   C. Muscle
   D. Scientist

6. The reader can tell from the news story that _____.
   A. Most cell phones never die.
   B. People will wear the brace while reading.
   C. Electricity is used to power only a few devices.
   D. Some people may think that the knee brace is too heavy.

Day 3 Science (continued)

7. The news story says: “How does the knee brace work? People put one of the knee braces on each leg. Each knee brace has a generator inside. Then, the people start walking. Each step takes energy to move the leg back and forth. As the leg moves, the knee brace's generator "catches" this energy. Then, the generator changes the energy into electricity.” This paragraph helps the reader to understand _____.

A. How the knee brace makes electricity
B. When the knee brace was first used
C. How long it took to make the brace
D. Where the knee brace is sold

8. The news story says: “This electricity could be used to power different devices. One minute of walking could power a cell phone for 10 minutes. The generator could also be used to power artificial joints.” In the sentence above, the word power must mean _____.

A. Break
B. Run
C. Make
D. Sell

9. Let's say you could wear the knee brace from the news story. People are asking about it. Tell why you're wearing it and how it feels. Look at the news story for ideas. You can use ideas of your own, too. Write your answer on the lines below.

_____

_____

_____

_____

_____

_____

Day 4 Schedule

Subject	Minutes Per Day (At Least!)	Assignments	What Did I Learn Today?
Reading and Writing	45	• Learn new vocabulary words from the Vocabulary List • Activity 1: Reading • Activity 2: Retell the Story	•
Math	45	Complete: • How Much Do We Save? • Wish List	•
Science	30	• Workers Wanted (English or Spanish)	•
Fitness and Health	30	• Exercise for 30 minutes. Choose from the Activity Calendars at the back of this packet	•
Arts	30	• Choose one or two activities from the Arts Activities at the back of this packet	•
TV Shows and Websites	30	• Choose TV shows and websites to further your learning at home	•

Day 4 Reading and Writing

Vocabulary

Learn new vocabulary words from the Vocabulary List at the back of this packet. Practice using these words throughout the day.

Activity 1: *Reading*

- Read the following story:

“High and Lifted Up” by Mike Krath

It was a windy day.

The mailman barely made it to the front door. When the door opened, Mrs. Pennington said, "hello", but, before she had a real chance to say "thank you", the mail blew out of the mailman's hands, into the house and the front door slammed in his face. Mrs. Pennington ran to pick up the mail.

"Oh my," she said.

Tommy was watching the shutters open and then shut, open and then shut.

"Mom," he said, "may I go outside?"

"Be careful," she said. "It's so windy today."

Tommy crawled down from the window-seat and ran to the door. He opened it with a bang. The wind blew fiercely and snatched the newly recovered mail from Mrs. Pennington's hands and blew it even further into the house.

"Oh my," she said again. Tommy ran outside and the door slammed shut.

Outside, yellow, gold, and red leaves were leaping from swaying trees, landing on the roof, jumping off the roof, and then chasing one another down the street in tiny whirlwinds of merriment.

Tommy watched in fascination.

"If I was a leaf, I would fly clear across the world," Tommy thought and then ran out into the yard among the swirl of colors.

Mrs. Pennington came to the front porch.

"Tommy, I have your jacket. Please put it on."

However, there was no Tommy in the front yard.

"Tommy?"

Tommy was a leaf. He was blowing down the street with the rest of his play-mates.

A maple leaf came close-by, touched him and moved ahead. Tommy met him shortly, brushed against him,

and moved further ahead. They swirled around and around, hit cars and poles, flew up into the air and then down again.

"This is fun," Tommy thought.

The maple leaf blew in front of him. It was bright red with well-defined veins. The sun-light shone through it giving it a brilliance never before seen by a little boy's eyes.

"Where do you think we are going?" Tommy asked the leaf.

"Does it matter?" the leaf replied. "Have fun. Life is short."

"I beg to differ," an older leaf said suddenly coming beside them. "The journey may be short, but the end is the beginning."

Tommy pondered if this was the best a leaf could ponder.

"Where do we end up?"

"If the wind blows you in that direction," the old leaf said, "you will end up in the city dump."

"I don't want that," Tommy said.

"If you are blown in that direction, you will fly high into the air and see things that no leaf has seen before."

"Follow me to the city dump," the maple leaf said. "Most of my friends are there."

The wind blew Tommy and the maple leaf along. Tommy thought of his choices. He wanted to continue to play.

"Okay," Tommy said, "I will go with you to the dump."

The winds shifted and Tommy and the leaf were blown in the direction of the city dump.

The old leaf didn't follow. He was blown further down the block and suddenly lifted up high into the air.

"Hey," he called out, "the sights up here. They are spectacular. Come and see."

Tommy and the maple leaf ignored him.

"I see something. I see the dump." The old leaf cried out. "I see smoke. Come up here. I see fire."

"I see nothing," the maple leaf said.

Tommy saw the fence that surrounded the city dump. He was happy to be with his friend. They would have fun in the dump.

Suddenly, a car pulled up. It was Tommy's mom. Mrs. Pennington wasn't about to let her little boy run into the city dump.

"Not so fast," she said getting out of the car. "You are not allowed to play in there. Don't you see the smoke?"

Tommy watched the maple leaf blow against the wall and struggle to get over. He ran over to get it but was

unable to reach it.

Mrs. Pennington walked over and took the leaf. She put it in her pocket.

"There," she said, "it will be safe until we get home."

Tommy smiled, ran to the car and got in. He rolled down the back window and looked up into the sky. He wondered where the old leaf had gone. Perhaps one day he would see what the old leaf had seen - perhaps.

Activity 2: *Retelling the Story*

- The story you read contained a lot of dialogue. Dialogue is used in stories to show that people are speaking. Try retelling the story without using any dialogue below. For example: Instead of writing "Mom," he said, "may I go outside?" write: Tommy asked his mom if he could go outside.

Day 4 Mathematics

Vocabulary

Learn the new math vocabulary words below. You will use these vocabulary words in the activities today.

- **Estimate**: When you estimate the answer to a problem it means that you give a pretty good guess at what the answer will be.
- **Combine**: To join two or more things together in order to make one thing.
- **Triple**: To multiply something by three.

Activity 1: *How Much Do We Save?*

- Follow the instructions on the attached sheet. What are some reasons that people use grocery and store coupons?

Activity 2: W*ish List*

- Follow the instructions on the attached sheet. What sort of things do people buy through catalogs?

If you need Spanish activities for the concept of measurement**,** please follow the steps below.

1. Go to tutorial site: http://destination.nycenet.edu

2. Login with the following user ID and PW:
   - User: studentnyc
   - Password: student

3. Click on the Exploration Icon to access the tutorial

4. Scroll down to Mastering Skills & Concepts: Course II – Spanish

5. Select the skill/concept to review:
   - Activity 4: 3.2.2 - Money

Notebook:

In your notebook, please answer the following question:

- Can you think of any other ways that your family can save money?

Additional Activity

Do you have more time? If so, please complete the following activity.

- Let's Play Store

These activities are from:
http://athomewithmath.terc.edu/english_PDF/math_ENG_sect7.pdf
http://athomewithmath.terc.edu/english_PDF/math_ENG_sect8.pdf

7 How much do we save?

Materials

- Grocery advertisements with coupons
- Scissors
- Pencil and paper (optional)

"Look—here's a coupon for $1.00 off on juice bars, and here's one for 60¢ off my favorite brand of chunky peanut butter! There's a bunch of others we can use, too. I wonder how much we'll save."

Everyone wants to save money! With coupons, children can learn about math and about saving. In this activity, as children figure out coupon savings, they practice adding, multiplying, and estimating with dollars and cents. You can do this activity even if you don't use coupons when you shop.

Before you begin

Alone or with your child, go through grocery advertisements and cut out about 20 coupons. If you use coupons, pick ones you think you'll use on your next trip to the store.

1. Talk about grocery coupons and store savings

If your children are unfamiliar with coupons, explain how people use them. Point out the important information on several coupons—the product, how many you have to buy, the amount of savings, and when the offer expires.

Ask your children to make a quick prediction about how much your family generally spends on groceries each week, and how much you could save with coupons. Some children will have no idea of these amounts. As you repeat this activity, they'll develop a better understanding.

2. Find out the savings

Ask your children to find the total value of all the coupons in the set.

If they need help getting started, ask them to begin by sorting coupons worth the same amount into separate piles—a pile of 25¢ coupons, a pile of 50¢ coupons, and so on. Here are some other things you can suggest:

Combine coupons to make dollars. Suggest finding and grouping coupons that add up to $1.00, such as 40¢ + 60¢, or 25¢ + 25¢ + 50¢. Your children can also make groups that total $2.00, other whole-dollar amounts, or amounts like 50¢ that are easy to work with.

Count up to add coupons worth the same amount. For example, your children could count a group of 25¢ coupons this way: 25¢, 50¢, 75¢…. If your children need help after the first few coupons, you can count along.

Keep track of the coupons already added and those still left to add. Your children can make a special place to set aside coupons after figuring them into the total.

If your children need help finding the total of all the coupons, talk through how you would do it yourself.

3. Explain solutions

Listen to your children as they explain how they added the coupon amounts. Encourage them to check the total by adding the coupons in a different way—for example, by regrouping them into different "dollar" combinations, or adding them up in a different order.

Age range 7–11 (for ages 5–7, see Variations)

When you repeat this activity

Try this with coupons for the pharmacy or hardware store, or with coupons your children choose for their own "pretend" grocery shopping lists. If you use coupons, you can make this activity a regular part of your grocery shopping routine.

For more challenge, if your market doubles or triples the value of any coupons, explain how this works. Children can find the total value of the coupons with this information in mind.

Variations

Use a calculator (ages 7–11)

After your children do this activity with a calculator, ask them to check their results with a mental estimate. For example, they can round coupon values to the nearest 25¢ (round 45¢ to 50¢ or 99¢ to $1.00) and then figure the approximate total. Ask children to talk about times when it makes sense to use a calculator and times when it's just as easy or easier to find the total using common sense.

Do we have enough to save $5.00? (ages 5–7)

Provide about 10 coupons worth different amounts. Choose coupons worth 25¢, 50¢, or whole-dollar amounts. This is the challenge: Find out if there are enough coupons to save your family at least $5.00. (If you have a lot of coupons worth whole-dollar amounts, choose a larger total.) Ask your children to explain how they found the answer.

How can you sort the coupons? (ages 5–7)

This activity can help children work on sorting, logical thinking, and numbers. Provide 20 or more coupons for your children to sort into groups. They can decide what the groups will be. They might form categories like junk food, healthy food, things you can eat, things only pets can eat, or things you use to clean with. When they have finished sorting, ask number questions about their coupon groups:

"Which group has the most coupons? Which group has the fewest? Which coupon lets us save the most? The least?"

8

Wish list

Materials

- A mail-order catalog or advertising supplement likely to contain items of interest to your child. If your child's school sends home book club order forms, you can use those.
- Pencil and paper
- Stick-on notes (optional)

"There are so many great things in this catalog. If I had $50 to spend, what would I buy?"

Mail-order catalogs and advertising supplements can be a temptation, a convenience, and an annoyance. They can also be an opportunity for lots of math! In this activity, children pretend they have a certain amount of money to spend. They use a catalog or an advertising supplement to make a "wish list" of items they can buy for their spending limit. As they make their choices, they practice addition, subtraction, and estimation with dollars and cents. They also learn about working within a budget.

This activity can be a great way to keep children occupied—and doing math—on long trips, at the kitchen table while you're making dinner, or on rainy days.

Before you begin

Pick a spending limit for your child's wish list. The limit need not be realistic, since this is just a wish list.

For children ages 7–9 try a limit between about $25 and $50 the first time you do the activity.

1. What would you get?

Provide a catalog or advertising supplement for your child to look through and suggest making a wish list.

"That easel and paint set would be fun to have. They're not in our price range, but let's pretend we could get some things from this catalog. What would you get if you had $100 to spend?"

Explain that your child can't go over the spending limit, although it's OK to spend a little less.

2. Make a wish list

Your child can record items and prices, or use stick-on notes to mark pages that have items of interest.

If your child needs ideas for getting started, suggest one of these first steps:

Start with one item. Subtract the cost of that item from the spending limit. How much is left to spend?

Start with two items and find out how much they cost together. Are you past the spending limit yet? If so, exchange at least one item for a cheaper one. If not, choose another item.

Round any "dollars and cents" prices to the nearest dollar. If an item is $5.95, call it $6. If it's $5.25, call it $5. Use the whole-dollar prices to do some quick calculations or estimates. Once you get close to your spending limit, figure out the exact amounts to make sure you're not over.

Some children will try several (or many) combinations of items before they settle on a list that is within the spending limit.

If some of the calculations are too challenging, talk through how you would do them yourself. Next time, choose a lower spending limit.

3. Discuss everyone's choices

Listen to your children tell how they made their choices. If they don't mention any calculations, encourage them to tell you about this, too.

"You chose some great things! How did you keep track of all the prices to make sure you stayed under your limit? … Did you come up with any combinations of things you wanted that were over your limit? … So, then what did you do?"

If you notice errors in calculating, encourage your children to explain their thinking further.

"So, you added 18 and 14, and got 31. How did you get that?"

Children may notice and correct mistakes as they talk about how they got their answers. If not, help them work through their own approach again. For example, suppose your child says, "First I added 10 to 18, that's 28. Then I added 4 more—28, 29, 30, 31." Let your child know what was successful, then talk through the trouble spot.

"That's a good way to do it—tens first, then ones. So you have 28 and you want to add 4. What's 28 and 1 more? … OK, 29. What's 28 and 2 more? … 3 more? … 4 more?"

When you repeat this activity

Use different catalogs and advertising supplements, and vary the spending limits. Ask your children to explain some of the calculations they are doing as they make their wish lists, and encourage them to check their work by doing the calculations in a different way.

Variations

Use a calculator (ages 7–11)

Many adults use calculators when doing routine calculations at home and at work, so it's important that children have a chance to learn what calculators can do. As children are making their choices and checking to see if they've reached the limit, ask them to tell you how they're using the calculator.

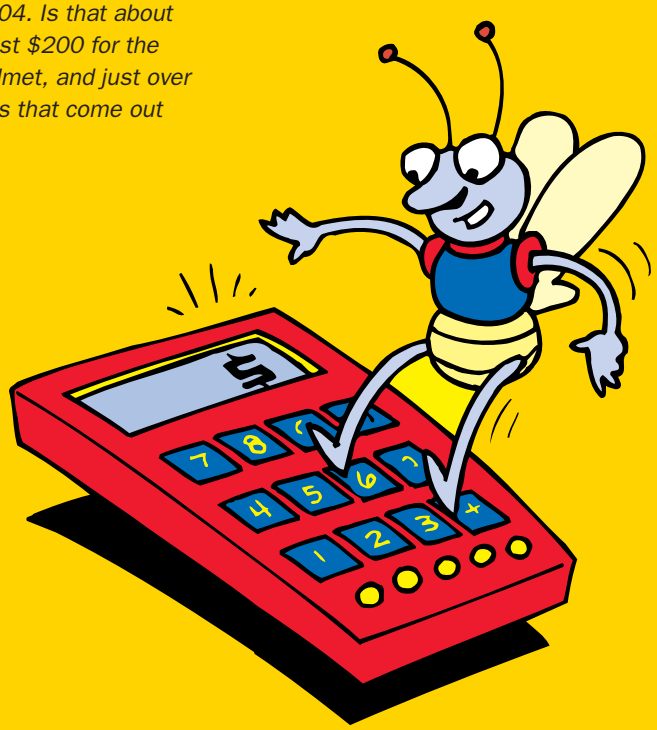
"So, what did you enter? … Did you add or subtract? … That number on the calculator display—what's that the total of?"

Let children know that when they use calculators, it's important to make sure they've entered correct calculations. Encourage them to check their results with a mental estimate.

"So the total for the bicycle, helmet, and sneakers comes out to $304. Is that about right? Let's see—it's almost $200 for the bike, about $40 for the helmet, and just over $50 for the sneakers. Does that come out close to $300?"

What do we save? (ages 7–11)

Sometimes mail-order companies put out "sale" catalogs in which some or all of the items are reduced in price. Usually, both the original price and the sale price are given. Ask your children to decide what they would buy for a given spending limit, and also to calculate how much they would save from the original prices.



Let's Play Store

What you'll need

Empty containers (cartons or boxes), old magazines, books, newspapers, calculator, pencil or crayon, and paper

What to do

1. Help your child collect empty containers so that you can play as if you were shopping at the grocery store. Gather the items and put them on a table.
2. Help your child think of a price for each item. Mark the prices on the containers. You can even mark some items on sale.
3. Pretend to be the customer while your child is the cashier.
4. Teach your child the difference between the math symbols (+, -, ÷, x, and =) and how they are used when using the calculator. Help your child add the prices of each item on the calculator and total the amount using the (=) symbol. Have your child write the total on a piece of paper, which will be your receipt.
5. While you and your child play store, you can ask questions likehow much would it cost to buy three cartons of eggs? How much does 1 box of soap cost, if they are 2 for $5.00? How much is my bill, if I don't buy the cereal? How much more will it cost if I buy this magazine? Have your child estimate the amounts of the items you are buying. Check to see if the estimation is correct on the calculator.

Parent Pointer
! Learning to use the calculator will help your child understand and apply estimation and reasoning skills, as well as learn addition, subtraction, division, and multiplication.

Day 4 Science

Vocabulary

Learn the new vocabulary words below. You will use these vocabulary words in today's activity.

- **capture (verb):** to catch
- **dangerous (adjective)**: not safe
- **renewable (adjective)**: can never be used up
- **technician (noun)**: a worker trained to do a special job
- **turbine (noun)**: a machine with fan-like blades that turn

Activity 1: *Workers Wanted (English or Spanish)*

- Read the article below and answer the questions that follow.
- Para Espanol, prime aquí: http://SCHOOLS.NYC.GOV/Documents/teachandlearn/LearnatHome/ELL/3day4sp.pdf

Printed by: Aron Persaud

Workers Wanted

Charlie Riedel/AP Photo

LINCOLN, Kansas (Achieve3000, February 19, 2008). Wind farms are going up across the country. These farms use wind to make power. This is a cheap way to make electricity. Also, wind power is renewable. And, wind farms don't make the planet dirty.

Wind power is made at wind farms. The farms are made of rows of wind turbines. The turbines look like simple windmills. They turn in the breeze. The turbines capture the wind. They turn it into electricity.

Last year, workers put up almost 3,200 turbines on wind farms. These extra turbines allowed wind farms to make nearly twice as much wind energy. That's enough electricity to power 1.5 million homes for a year.

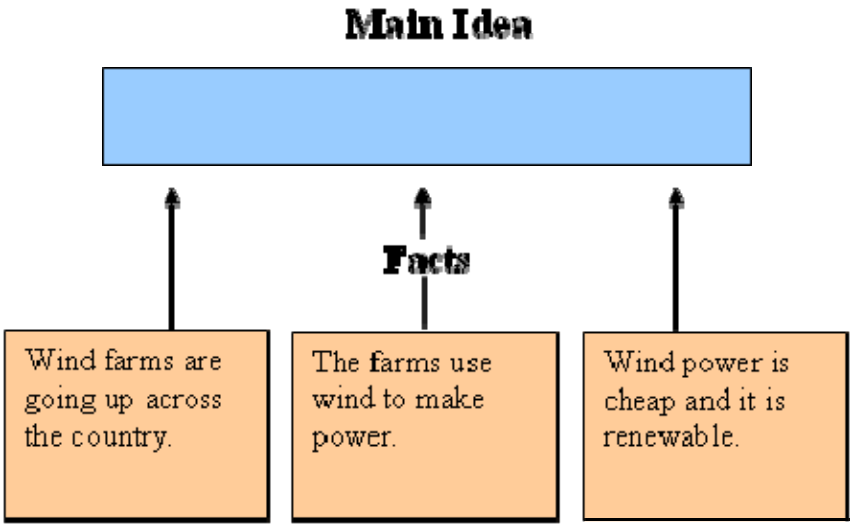
Not everyone likes wind farms. Some people say that the huge turbines are ugly. Also, the giant rotors, or blades, on the turbines could be dangerous. They could harm birds and other wildlife.

There's another problem with wind power. There aren't enough workers. People who build wind farms are highly trained. These technicians need to know about machines, computers, and weather. They also must climb 200 feet in the air. And, they have to do it in all kinds of weather. It isn't easy to find workers who can do all these things. Wind companies are hurrying to train more technicians.

Many people think wind power is here to stay. It is expected to continue growing.

Information for this story came from AP.

Day 4 Science (continued)



1. Think about the news story. Which fits best in the empty box above?
   A. More wind farms are being built, and they need more workers.
   B. Wind farm technicians must be able to climb 200 feet in the air.
   C. About 3,200 turbines can power 1.5 million homes for a year.
   D. Wind farm technicians need to know about machines and weather.

2. Think about the news story. Some people say that wind farms are dangerous. Why?
   A. Wind farms make the air dirty.
   B. Wind farm turbines could make too much power.
   C. Wind farms have too many workers.
   D. Wind farm turbines could harm birds and other wildlife.

3. Let's say you are writing a summary of the news story. Which is most important to put in the summary?
   A. Wind farm turbines look like simple windmills.
   B. Some people say that wind farm turbines are ugly.
   C. Technicians sometimes climb 200 feet in the air.
   D. Wind farms are being built and they need more workers.

4. Which two words from the news story have almost the same meaning?
   A. Workers and technicians
   B. Electricity and farms
   C. Machines and companies
   D. Problem and weather

5. The reader can tell from the news story that _____.
   A. Most wind farms were built hundreds of years ago.
   B. Working on a wind farm is not an easy job.
   C. All wind farms are built near many tall trees.
   D. Turning turbines takes very little wind.

Day 4 Science (continued)

6. The author probably wrote this news story to _____.
   A. Tell readers about the different ways that electricity can be made
   B. Show readers that wind power is the cheapest energy
   C. Tell readers about wind farms and their need for workers
   D. Show readers that wind power is the best energy

7. The news story says: "The turbines capture the wind." To capture is to _____.
   A. Pollute
   B. Scatter
   C. Model
   D. Catch

8. Which question is not answered by the news story?
   A. How many wind farms are there in the U.S.?
   B. Why are more wind power workers needed?
   C. How high must wind farm workers climb?
   D. Why are some people against wind farms?

9. Think about wind being used to make electricity. What are some good things about this? What are some bad things about this? Use facts from the news story to back up your answer. You can use ideas of your own, too. Write your answer in the box below.

Day 5 Schedule

Subject	Minutes Per Day (At Least!)	Assignments	What Did I Learn Today?
Reading and Writing	45	• Learn new vocabulary words from the Vocabulary List • Activity 1: Read a Poem • Activity 2: Write Your Own Poem	•
Math	45	Complete: • Which Holds the Most? • How Much is on the Floor?	•
Science	30	• The Sun Shines on Freiburg (English or Spanish)	•
Fitness and Health	30	• Exercise for 30 minutes. Choose from the Activity Calendars at the back of this packet	•
Arts	30	• Choose one or two activities from the Arts Activities at the back of this packet	•
TV Shows and Websites	30	• Choose TV shows and websites to further your learning at home	•

Day 5 Reading and Writing

Vocabulary

Learn new vocabulary words from the Vocabulary List at the back of this packet. Practice using these words throughout the day.

Activity 1: *Read a Poem*

- Below is a silly description poem that Karla Kuskin wrote. Read the poem.

ME
My nose is blue,
my teeth are green,
my face is like a soup tureen.
I look just like a lima bean.
I'm very, very lovely.
My feet are far too short
and LONG. My hands are left and right
and wrong.
My voice is like the hippo's song.
I'm very, very,
very, very,
very, very
lovely?

"Me" from *Dogs & Dragons, Trees & Dreams* by Karla Kuskin ©1980.

What do you like about the poem? What do you notice?

_____

_____

_____

_____

_____

_____

_____

_____

Day 5 Reading and Writing (continued)

Activity 2: *Write Your Own Poem*

- Write your own description poem here:

Day 5 Mathematics

Vocabulary

Learn the new math vocabulary words below. You will use these vocabulary words in the activities today.

- **Geometry**: Geometry is the science that studies the size and shape of things.
- **Dimension**: Refers to the length, width and height of an object. Each of these is one dimension of the object.
- **Volume**: Volume is the amount of space inside of something like a cube. Volume is always measured using linear measurements (like inches and centimeters) cubed to represent three dimensions.

Activity 1: *Which Holds the Most?*

- Follow the instructions on the attached sheet. How do you know how much a container can hold?

Activity 2: *How Much is on the Floor?*

- Follow the instructions on the attached sheet. To make an estimate would you just guess or use some strategy?

If you need Spanish activities for the concept of measurement**,** please follow the steps below.

1. Go to tutorial site: http://destination.nycenet.edu

2. Login with the following user ID and PW:
   - User: studentnyc
   - Password: student

3. Click on the Exploration Icon to access the tutorial

4. Scroll down to Mastering Skills & Concepts: Course II – Spanish

5. Select the skill/concept to review:
   - Activity 5: 3.2.1 - Time

Notebook

In your notebook, please answer the following question:

- How close were your estimates or predictions to the actual results? Did you get better as you got more practice?

These activities are from:
http://athomewithmath.terc.edu/english_PDF/math_ENG_sect9.pdf
http://athomewithmath.terc.edu/english_PDF/math_ENG_sect2.pdf

9

Which holds the most?

Materials

- A variety of plastic containers and bottles (see "Before you begin")
- Large waterproof container or mat for catching any spills when you pour water (optional)
- Funnel or pitcher for pouring (optional)

"I thought this tall container would hold everything, but it doesn't! I'll try this other one—it's shorter, but much wider."

Estimating how much can fit in a container, box, or suitcase is a practical skill that involves the math of geometry and measurement. In this activity, children work on this important math as they look for the container that holds the most water. They learn about length, width, and height—the three "dimensions" of three-dimensional shapes. They also learn that it's important to consider all three dimensions when you're trying to figure out what's the biggest.

Try this activity when you have a few extra minutes and are near a water source (the kitchen tap, the bathtub, an outdoor hose, or the beach).

Before you begin

Gather a few empty plastic containers in different sizes and shapes. You can use storage containers, toy bottles or pails, or containers that once held safe household products such as dish soap, syrup, or juice. (Clean them, and if possible, take the labels off.) Try to include some containers that hold about the same amount but look very different.

1. Predict which can hold the most

Ask your children to predict which container would hold the most if all the containers were full.

"What if we filled these empty containers all the way up with water—which one do you think would hold the most water?"

Some children may look at measures on container labels (such as "16 fl. oz." or "295 ml") to find which container holds the most. If this happens, suggest that just for fun, everyone should try predicting without looking at the labels.

2. Explain the predictions

Ask your children to give reasons for their predictions.

"Why do you think this one will hold the most?"

If they say, "It just looks bigger," encourage them to think about size and shape.

"Is the one you think will hold the most the tallest? Widest? Roundest?"

3. Test the predictions

Start with a container that someone thinks will hold the most. Fill it with water. If it's really the largest, there should be some extra when you pour the water into any of the other containers.

Choose another container and pour the water into it. (A funnel or pitcher can make the pouring easier.) Is there any water left over?

Keep trying this with different containers until you're sure which one holds the most.

4. Discuss whether the predictions matched the results

If your children were surprised about which held the most, encourage them to consider size and shape:

"We both predicted that this tall, thin shaving lotion bottle would hold the most, but this round shampoo bottle held the most. I wonder why. Do you think it's something about how wide it is?"

When you repeat this activity

Try some different containers—larger or smaller ones, a variety of sizes and shapes. Encourage younger children to use more "size and shape" words (such as wide, long, tall) as they talk about the containers. Challenge older children to find containers in the house that hold about the same amount but are shaped very differently.

Variations

How many times larger? (ages 7–11)

Gather a variety of empty containers. Include a small one (such as a spice jar) to "measure" the others with. Then, make some predictions:

"Let's say we want to fill up this big syrup bottle with water. We're going to do it by filling this little jar with water. Then, we'll pour the water from the little jar into the syrup bottle. How many times do you think we'd need to do that in order to fill the syrup bottle all the way up?"

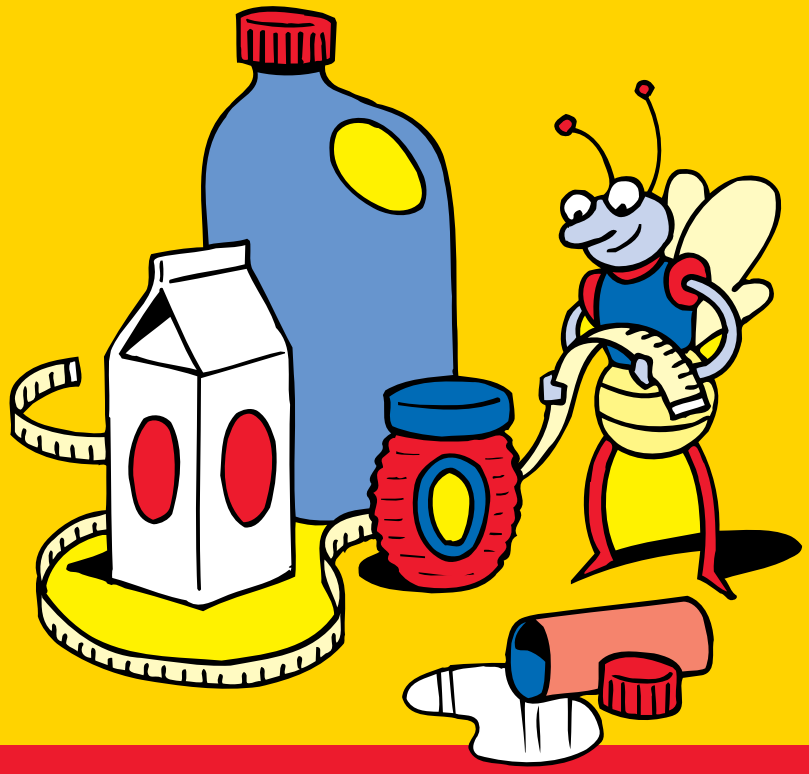
Check predictions by filling the containers with the small one you are using to measure with. Keep track of how many times you pour. If the containers are marked with how much they hold, challenge older children to verify their predictions with calculations based on these capacity measurements, too.

Check with measurements (ages 7–11)

Try this when you're unpacking groceries, organizing shelves, cleaning out the refrigerator, or searching for a container to store leftovers. The containers you use can be empty, full, or partly full.

Choose containers that are marked with how much they hold. Look for this measure on the labels of liquid products (such as honey, liquid detergents, and juice). Some plastic storage containers have this measure on the bottom. This measure is often given in both fluid ounces (fl. oz.) and milliliters (ml). You may also see liters (L), cups (c.), pints (pt.), quarts (qt.), or gallons (gal.). For this activity, use containers marked with the same units.

Ask your children to predict which would hold the most if they were all full. After children make their predictions, show them where one container is marked with how much it holds. Help them find a similar marking on each container, and then ask which number is largest.



2

How much is on the floor?

Materials

Ordinary household clutter

"Oh, Mom! Do I really have to clean up everything?"

Sometimes a little math can make chores more interesting. In this activity, children estimate how many things are scattered on the floor (or in some other cluttered place) and then count the things as they put them away.

Before you begin

Choose something your child can count and put away, such as crayons scattered on a table or toys on the floor. When you can't be available to help your younger children count, choose an area with limited clutter so that they'll be able to do the counting themselves. (Many 5- and 6-year-olds can count only 10 to 20 items accurately, even if they can recite the "counting numbers" much higher.)

1. Estimate how many things there are to put away

Ask your child to make an estimate—or to guess the number of items to be picked up.

"About how many things are we looking at here—about 10? About 50? Closer to 100 or 1000?"

Some children's estimates will be on the high side. They might say there are a thousand or even a million things on a messy floor. Over time, as they practice counting and estimating, their ability to judge amounts will improve.

2. Count the things as they are put away

Suggest that your children count each item that they put away. If you are supervising, you can help younger ones count as the numbers get larger.

3. Compare the actual count with the estimate

Part way through cleanup, give your child a chance to revise the original estimate.

"You predicted that there were about 1000 books on the floor. So far, you put away 29, and there are just a few left. Do you still think there are about 1000? Do you want to change your prediction?"

When the chore is done, compare the actual count to the latest estimate. If the estimate was "way off," assure your child that an estimate is just a guess, and that learning to make close estimates can take a long time.

When you repeat this activity

To give children lots of practice judging amounts, try this activity in different situations: when there are small things like beads or buttons to put away, larger items like clothing or shoes, or items of all different sizes. If you've been helping young children count, see if they can do more of the counting themselves.

Variations

Would that be enough? (ages 5–9)

Decide on a particular number of things for your children to put away. Before they begin, ask them to predict whether that amount is "enough" to clear all the clutter. Vary the task for children of different ages.

For ages 5–7: Give the children a total number of items. *"Look at all these toys on the floor! If we put away 15 toys, do you think we'd get the floor clean? Or would there still be some left on the floor?"*

For ages 7–9: Specify an amount for each of several people to pick up. *"There are three of us here to unload the dishwasher. What if we each put away 14 things? Would that be enough to empty the dishwasher? Let's try it and see."*

What's the most? (ages 5–9)

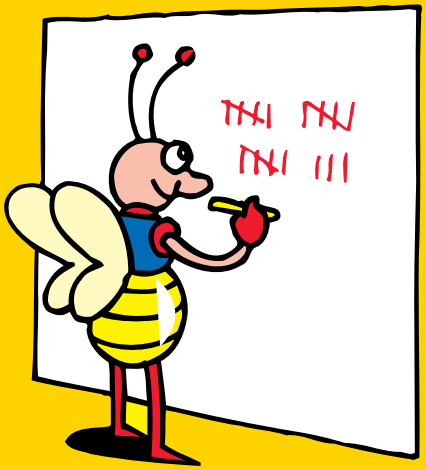
Try this when there are different kinds of things to put away—for instance, when you're sorting clean laundry that includes different kinds of clothes, or when there are different types of art supplies (markers, crayons, sheets of paper) on the table. First, make an estimate. Then count as you sort and put away.

"Let's take everything out of the clothes dryer. Do you think there are more socks, shirts, or towels in this load of laundry?"

"Who do you think has the most clothes in this load of clean laundry—you, Tony, Marco, me, or Mom? Let's sort the laundry to see!"

How many can you put away in a minute? (ages 5–9)

This works well when there are lots of little things scattered around. First, everyone estimates how much they can put away in exactly one minute (or some other amount of time). Then an older child or adult is the timer while everyone else picks up and counts. When the time is up, compare your estimates with your actual counts.



Day 5 Science

Vocabulary

Learn the new vocabulary words below. You will use these vocabulary words in today's activity.

- **electricity (noun):** power that is used to make heat and light
- **nuclear plant (noun):** a factory that makes nuclear energy
- **renewable (adjective):** can never be used up
- **solar (adjective):** about the sun

Activity 1: *The Sun Shines on Freiburg (English or Spanish)*

- Read the article below and answer the questions that follow.
- Para Espanol, prime aquí: http://SCHOOLS.NYC.GOV/Documents/teachandlearn/LearnatHome/ELL/3day5sp.pdf

The Sun Shines on Freiburg
Winfried Rothermel

FREIBURG, Germany (Achieve3000, August 6, 2007). The year was 1975. People living in Freiburg, Germany, spoke up. They said they did not want a nuclear plant. They wanted to come up with other ways to get energy.

And that's just what they did.

Over the years, Freiburg has become the place to study renewable energy. This is energy that does not die out. One kind of renewable energy comes from the sun. Another comes from the wind.

Freiburg has many homes that use solar energy. Places where many people gather also get their energy from the sun.

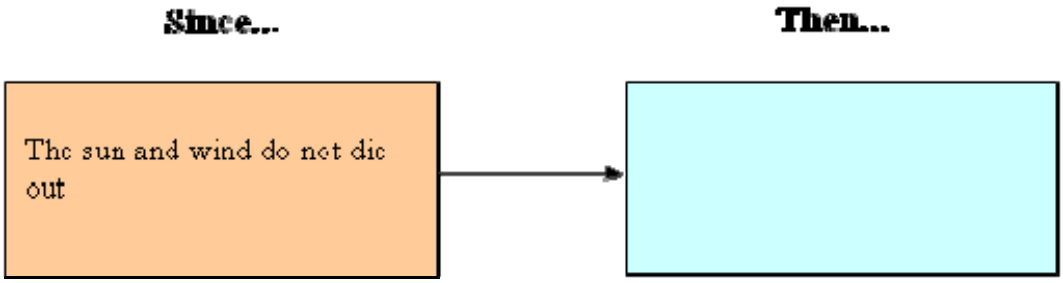
A man named Rolf Disch uses renewable energy. His house gets energy from the sun. The house is built to move. There are big metal sheets on the roof. The house turns so the metal sheets catch the sun. The house gets electricity from the sun.

Almost four percent of Freiburg's energy is renewable. Freiberg hopes that number will go up. By 2010, it wants 10 percent of its energy to be renewable.

The rest of Germany is also working to save energy. It wants to get rid of all nuclear plants. Now, much of its electricity comes from the wind. More and more, Germany is using the sun.

Information for this story came from AP.

Day 5 Science (continued)



1. Which fits best in the box above?
   A. They can be found in many German homes.
   B. They can be used for renewable energy.
   C. They can be caught by metal sheets on roofs.
   D. They can be used to run nuclear plants.

2. What is the main idea of this news story?
   A. A town in Germany is putting metal sheets on houses.
   B. A town in Germany is getting rid of nuclear plants.
   C. A town in Germany is using renewable energy.
   D. A town in Germany is making more energy.

3. Which means almost the same as almost?
   A. Exactly
   B. Nearly
   C. Already
   D. Rapidly

4. The news story says: "Over the years, Freiburg has become the place to study renewable energy. This is energy that does not die out. One kind of renewable energy comes from the sun. Another comes from the wind." Which best summarizes this paragraph?
   A. Freiburg teaches people about renewable energy.
   B. Freiburg is the best place to learn about the sun and wind.
   C. Freiburg teaches people about using the sun for energy.
   D. Freiburg is the only place to study different kinds of energy.

5. Which means the opposite of gather?
   A. Satisfy
   B. Squeeze
   C. Signal
   D. Spread

6. Which is not in the news story?
   A. A city that uses different kinds of energy
   B. A country that gets energy from water
   C. A city that uses only renewable energy
   D. A country that gets energy from wind

Day 5 Science (continued)

7. Which happened first?
   A. People in Freiburg built solar homes.
   B. Germany began getting energy from wind.
   C. People in Freiburg spoke up against a nuclear plant.
   D. Germany began getting rid of nuclear plants.

8. The news story says: "A man named Rolf Disch uses renewable energy. His house gets energy from the sun. The house is built to move. There are big metal sheets on the roof. The house turns so the metal sheets catch the sun. The house gets electricity from the sun." The author uses these sentences mostly to help the reader _____.
   A. Learn how one man in Freiburg uses solar energy
   B. Know that some Germans feel that Disch does a good job
   C. Understand why Disch is interested in solar energy
   D. Know that many people in Freiburg live in solar homes

Thought Question

Imagine that you live in a city that wants to use more renewable energy. Tell the city council why this should happen. What kind of energy should they use? Use facts from the news story to back up your answer. You can use ideas of your own, too. Write your answer on the lines below.

Vocabulary List: Grade 3

ELA	Math	Science	Social Studies
abbreviation adverb antonyms apostrophe chronological order complete sentence context clues contraction declarative exclamatory fact interrogative multi-meaning words opinion organization plural possessive predicate prefixes punctuation (commas) root word run-on sentence (introduction) singular story elements (character, setting, plot) subject suffixes summarize supporting details synonyms verb (types and functions)	addend area array commutative property data decimal denominator elapsed time estimation factor graph (using different types) horizontal measurement metric system multiple letter/number coordinates number sentence numerator perimeter place value probability (conceptual) product scale three-dimensional two-dimensional vertical	atmosphere conservation energy extinct force geological features life cycle magnetic attraction matter moon phases (basic four) natural resources observe offspring orbit organism photosynthesis physical change physical properties pollution predator prey rotation scientific method solar system water cycle weathering	agriculture barter borders cardinal directions citizenship conflict consumer culture distribution economy equator exports geographic features geography global hemisphere imports industry/ manufacturing latitude longitude map key (legend) natural resources physical map population producer product suburban timeline wants and needs

Source: http://jc-schools.net/tutorials/vocab/

Fitness and Health Activities

Participate in **30 or more minutes** of daily physical activity. Choose **at least three (3) activities** from the options below and the following calendars. There is something for everyone! Each one takes about 10 minutes. Increase your heart rate, improve flexibility, and build muscle strength!

If you have access to the Internet, you can track your physical activity by going to http://www.bam.gov/sub_physicalactivity/cal_index.asp, where you can create a customized physical activity calendar.

Grades 3-5

- Activity Calendar– online at
  - http://www.aahperd.org/naspe/Toolbox/pdf_files/May09/Calendar_Elem_Eng.pdf (English)
  - http://www.aahperd.org/naspe/Toolbox/pdf_files/May09/Calendar_Elem_Span.pdf (Spanish)
- Small Space Energizers – online at
  - http://www.ncpe4me.com/pdf_files/K-5-Energizers.pdf
- "10 at a Time" Activity Calendar – online at
  - http://www.aahperd.org/naspe/Toolbox/pdf_files/May09/Ten.pdf
- Get up and Move Game from "Lazy Town" – online only
  - http://www.noggin.com/games/lazytown/lazy_getup/
- Muscle Strengthening Routine at Home – online only
  - http://cdc.gov/physicalactivity/everyone/videos/index.html

May 2009
Elementary Physical Activity Calendar

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Duplicated with permission from the National Association for Sport and Physical Education (NASPE). To assess whether your child is receiving a quality physical education program, visit www.naspeinfo.org/observePE for an observation assessment tool.				**1** *Find a big target and throw as hard as you can at it. Step right at the target with your opposite foot.*	**2** *Rainbow game-play with a friend. Name a color- both of you run and touch 3 things of that color. Run fast!*
3 *Log rolls outside in the grass.*	**4** *Play opposite-run fast, run slow, skip high, skip low, march soft, march hard.*	**5** *Play catch with a friend- eyes on the ball, reach, and pull it in to catch it. Coach each other. Can you catch 100 times?*	**6** *Make a hopscotch court and play with family or friends. For ideas, go to: http://www.streetplay.com/rulesheets/pdf/hopscotchsheet.pdf*	**7** *Go outside and run-try different pathways- straight, zigzag, and curved; change speed-fast, slow.*	**8** *Spring cleaning- pick up sticks and grass clippings in the yard.*	**9** *Animal walks-move like a monkey, a rabbit, chicken, a dog, a snake, and a kangaroo.*
10 *Play jacks with a friend. No jacks? Use a little ball and some small stones. Go to: http://www.ehow.com/how_2964_play-jacks.html*	**11** *Can you throw a Frisbee®? Practice with a friend. How many catches can you make? Can you hit a target?*	**12** *Practice dribbling a ball with your feet today.*	**13** *Play statue. Hold a position for 10 seconds, and then try another pose.*	**14** *Balance on four body parts. Then try three. Then balance on two. Can you make different body parts be your base?*	**15** *Try doing cartwheels outside. Remember to start and land with your body sideways.*	**16** *Baseball season is here-practice striking a soft ball off a tee or from a pitch.*
17 *Climb on something today. Plan where to put your hands before you reach.*	**18** *Practice volleying with a friend-use a racquet or paddle. No paddle? Use a Frisbee® to strike.*	**19** *Race your friend today in the playground during recess.*	**20** *Set up bowling on your sidewalk or deck using empty water bottles filled with sand or water.*	**21** *Jump rope today. No rope? Pretend!*	**22** *Go on a neighborhood hike today with a friend- count how many things you see that can be used for physical activity.*	**23** *Practice skipping, skip everywhere you go today. Remember to step hop, step hop, over and over.*
24 *Find some stairs-run up and down the stairs ten times today.*	**25** *Do some sit ups - can you do 25 sit ups?*	**26** *List all the active words you know-do the activities ten times each today.*	**27** *List all the different things you can do with a ball and practice them.*	**28** *Play balloon volleyball over a chair with a friend. Can you keep it up?*	**29** *Do some push-ups outside with your hands on a railing or wall.*	**30** *Go to your local park and play on the playground equipment.*

May 2009
Ten At A Time Physical Activity Calendar

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Need help remembering exercises? Go to http://www.shapefit.com/training.html#8 for demos of exercises.	***Duplicated with permission from the National Association for Sport and Physical Education (NASPE). To assess whether your child is receiving a quality physical education program, visit www.naspeinfo.org/observePE for an observation assessment tool.***			*Each day lists one exercise that can be executed "10 at a time". Keep track of each set of 10 reps you accomplish throughout the day, or for cardio, ten minutes of the activity.*	***1 Squats w/ hands behind your head.***	***2 Power-walk 10 min.***
3 Tricep dips.	***4 Bench press.***	***5 Jump rope.***	***6 Concentration curls.***	***7 Lying hamstring curl.***	***8 Sitting overhead press.***	***9 Lying leg raise.***
10 Lifting side plank.	***11 Inclined push-ups.***	***12 Yoga plank position.***	***13 One-arm row to both sides.***	***14 Twisting crunches.***	***15 Stiff-legged dead lift.***	***16 Jump rope 10 min.***
17 Tricep extensions.	***18 Declined push-ups.***	***19 Knee tucks on a bench.***	***20 Bicep curl w/resistance.***	***21 Crunches with a basketball held under your chin.***	***22 Alternating walking lunges.***	***23 10 min power walk/jog.***
24 Toes to ceiling on bench.	***25 Wide arm push-ups.***	***26 Twisting bench crunch.***	***27 Superman.***	***28 Standing shoulder press.***	***29 Calf raises off a step.***	***30 Single leg lift.***

Arts Activities for Grades 3-5

A number of the activities listed reference specific works of art. If you are not familiar with them you may find them on the internet (even the performances). However, these are provided as examples, and you can substitute similar works of art with which you are familiar or to which you have access.

All Arts Activities taken from the *Blueprints for Teaching and Learning in the Arts: Grades PreK-12.*

DANCE

- Practice exercises and combinations learned in a dance classroom that build on strength, awareness, coordination, and control.

- Discuss what a dancer brings to dance and what a viewer brings to dance.

- Compare and contrast live or taped performances of dances that are narrative (e.g., Mark Morris' *The Hard Nut*) and abstract (e.g., Paul Taylor's *Esplanade*).

- Compare and contrast works by choreographers such as Jerome Robbins (*Fancy Free*), Fred Astaire/Hermes Pan (*Top Hat*), Paul Taylor (*Three Epitaphs*), Alvin Ailey (*Cry*).

- View videotapes of children studying dance in other countries (e.g., Russia: *The Children of Theatre Street*), and compare with students' own experiences in dance class.

MUSIC

- Listen to an American spiritual such as "Swing Low, Sweet Chariot" and, working in small groups, discuss feelings the song evokes. Use pantomime to demonstrate and capture responses.

- Listen to an orchestral piece such as "Dance Macabre" (Saint-Saens) and, in small groups, brainstorm/list the emotions and feelings evoked by the music. Discuss and report back to the class.

- Create instruments made from recycled or found materials.

- Use the Internet to identify music makers and music-making institutions in New York City.

- Go online and research the most unusual or unexpected jobs in the music industry.

- Develop 10 questions to ask a person in the music industry about jobs other than performing.

THEATER

- Through storytelling, puppetry, poetry jam, or pantomime, tell a short original or traditional story, using theater skills. May be done solo or with siblings.

- Write a character biography or autobiography using the "5 W's" (who, what, when, where, why).

- Develop scenes through improvisation, theater games, or writing that have distinct character, clear relationships, conflict, setting, actions, and beginning- middle- end.

- Use situations from literature, history, or current events to create tableaux (frozen body pictures), and then devise character monologues from that frozen moment.

- Measure a room at home, create a ground plan, and place furniture according to the plan.

- Design a marketing poster and program with logo or illustration based on a particular story or play.

VISUAL ARTS

- Create a painting that demonstrates:
    - observation of detail
    - use of primary and secondary colors
    - use of tints and shades
    - balanced composition

- Looking at a work of art, discuss how the artists use detail, color, and balance to evoke a sense of place.

- Create a series of drawings that demonstrates:
    - volume
    - proportion
    - gesture
    - control

- Suggested theme: gesture drawings that show a figure at rest, work, and play. Refer to drawings by artists such as Leonardo da Vinci, Edgar Degas, and Keith Haring to explore the expressive use of line; the work of Reginald Marsh and Al Hirschfeld to examine gesture.

- Create a collage using hand-painted paper that demonstrates:
    - awareness of visual textures
    - mixing secondary and tertiary colors
    - designing and cutting out shapes
    - use of positive and negative space

Educational TV Shows

Channel	Show	Subject	Day	Time	Recommended Audience	Description
PBS-13	Cyberchase	Mathematics	Weekdays	8:00 AM; 5:00 PM	2-3, 4-5	Animated series featuring adventures driven by different math concepts. When the dastardly villain The Hacker launches a mad mission to conquer the virtual universe, Motherboard calls upon three Earth kids for help.
Discovery	How It's Made	Science, Engineering	Weekdays	9:00-10:00 AM	4-5, 6-8, 9-12	The show is a documentary program showing how common, everyday items (including food products like bubblegum, industrial products such as motors, musical instruments such as guitars, and sporting goods such as snowboards) are manufactured.
Animal Planet	Growing Up	Nature	Weekday	4:00 PM	4-5, 6-8, 9-12	Each episode is an hour long and follows the life (usually the first year) of a wild animal growing up in captivity.
HBO OnDemand	Crashbox	Science, Math, Vocabulary	OnDemand	27 minutes	2-3, 4-5	Crashbox is an educational television series that airs on the HBO Family digital cable television channel in the United States. It aims to educate grade-school children in history, math, vocabulary, and other various subjects.
HBO OnDemand	Earth to Kids: A Guide to Products for a Healthy Planet	Science, Environmentalism	OnDemand	27 minutes	2-3, 4-5, 6-8	Making the Earth a better place to live is the focus of this special on reducing, reusing, and recycling trash.

Channel	Show	Subject	Day	Time	Recommended Audience	Description
WLIW	Maya and Miguel	ELA, Spanish	Weekdays	3:30 PM	2-3, 4-5	The show models how people communicate in English in a variety of social settings. Each episode also focuses on a particular set of vocabulary words, which are repeated throughout the show. In addition, *Maya & Miguel* fosters a positive attitude toward knowing and learning more than one language.