Chapter 10 Lesson 1

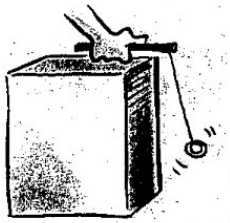
Measuring Time

GOAL

Measure time using non-standard units.

You will need a pendulum.

1. Estimate the number of times your pendulum will swing in the time you take to draw these 4 shapes:



rectangle triangle circle square

estimate: about _____ times

Test your estimate. Ask someone else to count the pendulum swings.

test: _____ times

2. Estimate the number of times your pendulum will swing in the time you take to open and shut a door 5 times. Test your estimate. Ask someone else to count the pendulum swings.

estimate: about _____ times

test: _____ times

3. Choose another activity to measure using your pendulum. Estimate the measurement, and then test your estimate.

activity: _____

estimate: about _____ times

test: _____ times

At-Home Help

You can make your own pendulum using a weight (or any other small, heavy object), a string that is 30 cm to 40 cm long, and a pencil.

Step 1: Tie one end of the string to the weight.

Step 2: Tie the other end of the string to one end of the pencil.

Step 3: Hold your pendulum by the pencil. Put your hand and the pencil on the edge of a table. Make sure that the string and weight can swing without hitting anything.

Step 4: To make your pendulum swing, move the weight to one side and then let go. The pendulum will swing back and forth.

4. Circle the unit you would use to measure the time it takes to do each activity. Explain your choice.

a) Activity: brushing your teeth

Unit: pendulum swing OR length of a TV show

_____

_____

b) Activity: staying with a babysitter

Unit: pendulum swing OR length of a TV show

_____

_____

c) Activity: going on a camping trip

Unit: length of a TV show OR number of sleepovers

_____

_____

5. Why does it make sense to choose a short unit to measure a short activity and a longer unit to measure a longer activity?

_____

_____

_____

Unit 10

Lesson 2 Using Seconds, Minutes, and Hours

GOAL Measure and compare lengths of time using seconds, minutes and hours.

1. Estimate how many times you can clap in 10 seconds. Test your estimate.

   estimate: about _____ times

   test: _____ times

2. Circle the best estimate for each activity. Explain your choice.

   a) The time we have for lunch at school.

   about 1 minute OR about 1 hour

   _____

   _____

   b) The time it takes to print my name.

   about 4 seconds OR about 4 minutes

   _____

   _____

   c) The length of our gym class.

   about 30 minutes OR about 30 hours

   _____

   _____

At-Home Help

A **second** is a short unit of time. For example, it takes about 1 second to say the words "one thousand."

A **minute** is a unit of time that is 60 seconds long.

An **hour** is a unit of time that is 60 minutes long.

3. a) How are seconds related to minutes?

_____

b) How are minutes related to hours?

_____

4. Owen can deliver 60 newspapers in 1 hour.
How many newspapers can he deliver in 1 minute?
Explain how you know.

_____

_____

5. What unit would you use to measure how long it takes to eat a pear? Explain your choice.

_____

_____

6. Why would you not want to use hours to measure how long it takes to blow up a balloon?

_____

_____

7. Why do we measure some times in minutes, some times in seconds, and some times in hours?

_____

_____

_____

Chapter 10 Lesson 3

Measuring Longer Lengths of Time

GOAL

Describe activities that take different lengths of time.

1. Circle the activities that take 1 or more hours.
   - watching a movie
   - eating an apple
   - going to school
2. Circle the activities that take 1 or more days.
   - watching TV
   - going away for the weekend
   - eating lunch
3. Circle the activities that take 1 or more weeks.
   - going on a summer vacation
   - making a sandwich
   - learning to play hockey
4. Circle the activities that take 1 or more months.
   - growing a plant
   - finishing Grade 3
   - taking a math test
5. Circle the activities that take 1 or more years.
   - making your bed
   - growing 10 cm taller
   - visiting a friend's house
6. Write one activity that takes 1 or more days.

_____

At-Home Help

A **day** is the amount of time from one sunrise to the next sunrise.

A **week** is a unit of time that is 7 days.

A **month** is a unit of time that is about 4 weeks.

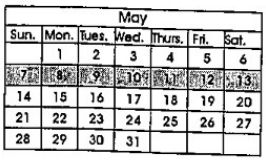
A **year** is a unit of time that is 12 months.

Unit 10

Lesson 3 Measuring Longer Lengths of Time

GOAL Describe activities that take different lengths of time.

7. For each of the activities below, print the number of the activity under the column that best measures the length of time that activity would take.



May						
Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

A. Activities

1. Sharpen a pencil
2. Sleep all night
3. Take a shower
4. Watch a movie
5. Have your birthday party
6. Watch a hockey game
7. Plant five flower seeds
8. Jump up and down ten times
9. Cough
10. Sneeze
11. Jump up and down once
12. Walk home from school
13. Draw a picture
14. Run around the school once
15. Play one soccer game
16. Vacation at Disneyland

Seconds	Minutes	Hours	Days

Chapter 10

Lesson 4

Creating a Calendar

GOAL

Create a calendar for a chosen month, and use your calendar to solve problems.

1. List the months from January to August that have 30 days.

_____

2. In which months does the 10th happen on a Tuesday?

_____

3. Sara went camping with her family on March 13. She came back on March 21. How many days was she gone?

_____

4. Maria visited her grandmother from April 28 to May 2. How many days did she visit her grandmother?

_____

5. Jonathan starts an art class on June 20. The class will end on July 18. How many weeks is the class? Circle the dates on the calendars to help you.

_____

6. Write a problem that can be solved using a calendar. Solve your problem.

_____

_____

_____

January

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

February

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

June

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23/30	24/31	25	26	27	28	29

Unit 10

Lesson 4 Creating a Calendar

GOAL Create a calendar for a chosen month, and use your calendar to solve problems.

7. This calendar shows the weather for the month of April.

April						
Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

rainy

cloudy

partly sunny

sunny

a) How many **more** days in April were partly sunny than sunny?

_____

b) Tell 3 things you can see about the weather in April by looking at the calendar.

_____

_____

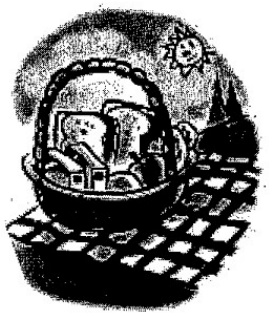
_____

c) Is April a good month to plan a picnic? Why or why not?

_____

_____

_____



*Notice how some months have 31 days and others have 30. February is special with only 28 or 29 in a Leap Year.

2020 Calendar

January

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

February

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

March

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

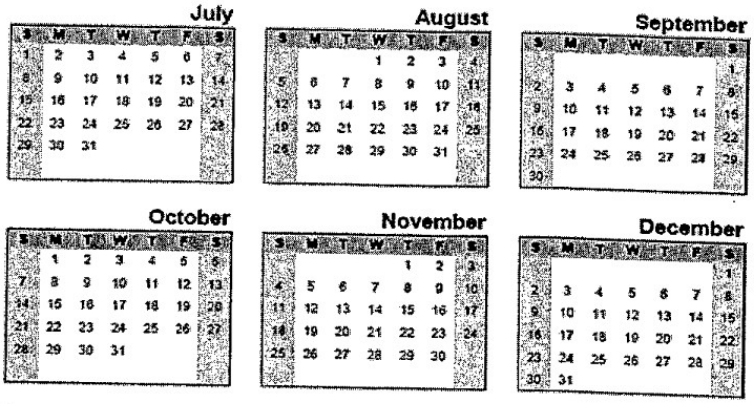
December

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Unit 10

Lesson 5 Solving Problems Using a Chart

GOAL Use a chart to solve problems about time.



July

S	M	T	W	T	F	S
	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

August

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

September

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

October

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

November

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

December

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

1. a) Complete the chart by using the calendar above.

Month	Days	Weeks + days
August		
September		
October		
November		
December		

b) How many days are in the last 5 months of the year (August to December)? Show your work.

c) How many full weeks are in the last 5 months of the year? Show your work.

Chapter 10 Mid-Chapter Review

Lesson 1

You will need
- calendars

1. Circle the unit you would use to measure the time it takes to do each activity. Explain your choice.

   a) Activity: going for a bike ride

   Unit: sand timer turn OR length of a TV show

   _____

   _____

   b) Activity: going to another province

   Unit: length of a song OR length of a sleepover

   _____

   _____

Lesson 2

2. Choose the unit of time you would use to measure how long it takes to do each activity. Explain your choice.

   a) Activity: taking a shower _____

   _____

   _____

   b) Activity: finishing 2 grades of school _____

   _____

   _____

Units of Time
seconds
minutes
hours
days
weeks
months
years

Lesson 4

3. a) Fill in the missing numbers on Eve's calendar. Hint: July has 31 days.

Eve's Calendar

July						
Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
		1	2	3	4	5
6	7					

Canada Day

swimming lesson

Dad's birthday

camping trip

sleepover at Julie's

b) On what dates will Eve be away on a camping trip?

_____

c) How many days apart are Canada Day and Eve's dad's birthday?

_____

Lesson 5

4. Valentine's Day is on February 14. National Aboriginal Day is on June 21. How many days apart are Valentine's Day and National Aboriginal Day? Use the calendars on page 143 to solve the problem. Explain what you did.

_____

_____

_____

Chapter 10
Lesson 6

Measuring Mass in Grams

GOAL

Estimate and measure mass in grams.

You will need a pencil, a pen, and the cap of a pen.

1. Circle the objects that could have a mass of about 1 g.

a matchstick | a glass of juice

a paper clip | a tissue

2. A small grape has a mass of 2 g. Estimate the mass of 3 grapes. Show your work.

3. A pencil has a mass of about 5 g.

a) Estimate the mass of 10 pencils.

about ____ g

b) Find a pencil and a pen. Use the pencil to help you estimate the mass of the pen.

about ____ g

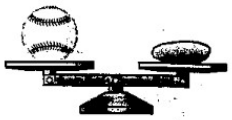
4. The cap of a pen has a mass of about 1 g. Use the cap of a pen to help you find 2 other objects that have a mass of about 1 g.

Object 1: _____

Object 2: _____

At-Home Help

Mass is the amount of matter in an object. For example, the baseball and the rock have the same mass.



A **gram (g)** is a unit for measuring mass. For example, a ones block has a mass of about 1 g. The cap of a pen also has a mass of about 1 g.

Chapter 10

Lesson 7 Making a Kilogram

GOAL

Create a 1 kg mass.

You will need a litre of water.

At-Home Help

A **kilogram (kg)** is a unit for measuring mass. For example, a brick has a mass of about 1 kg.

1. A litre of water has a mass of 1 kg. Use a litre of water to help you estimate the mass of each object.

a litre of milk: about _____ kg

a kitchen chair: about _____ kg

a lamp: about _____ kg

a telephone book: about _____ kg

2. Circle the objects that probably have a mass of 1 kg or more.





3. At your home, find 3 things that have a mass of 1 kg or more.

Object 1: _____

Object 2: _____

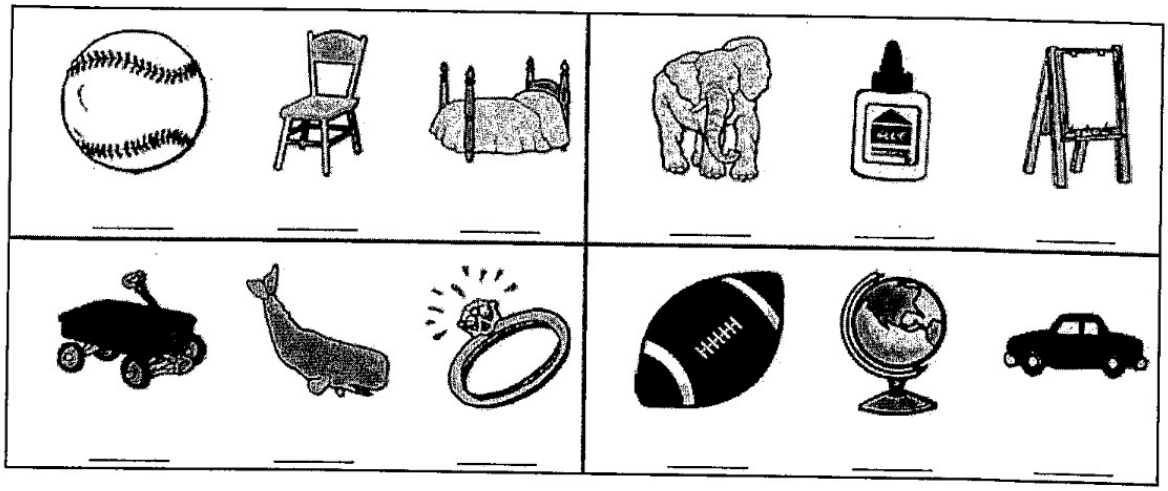
Object 3: _____

Unit 10

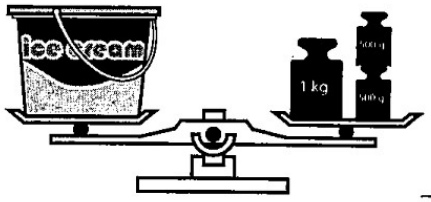
Lesson 7 Measuring in Kilograms

GOAL Use kilograms to measure mass.

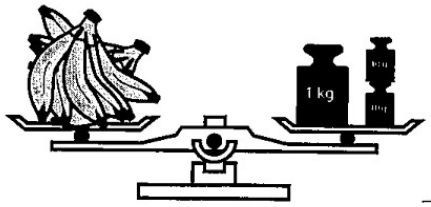
4. Order the three objects in each box from lightest (1) to heaviest (3).

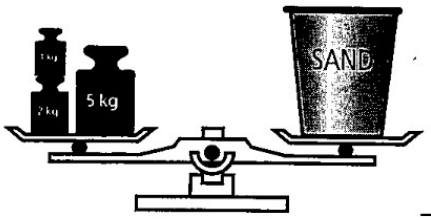


5. Find the mass of the object on each balance by adding the weights.



= 1000 grams





Chapter 10
Lesson 8

Measuring Mass in Kilograms

GOAL

Estimate and measure mass in kilograms.

1. Circle the best estimate for the mass of each object.

a) a piece of paper: 1 g OR 1 kg

b) a textbook: 1 g OR 1 kg

c) a tub of ice cream: 1 g OR 1 kg

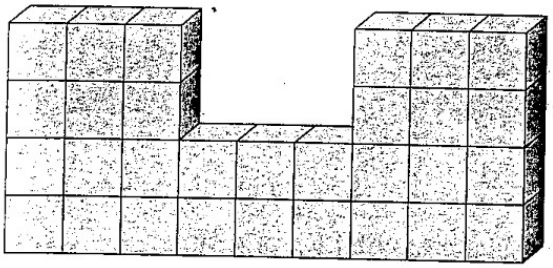
d) a penny: 1 g OR 1 kg

2. What is the best estimate for the mass of an orange: 1 g, 100 g, or 1 kg?

_____

3. The mass of this block is 1 kg. 

What is the mass of this structure made from 1 kg blocks?



_____ kg

4. Circle the best estimate for the mass of a television.

10 g OR 10 kg

5. Would you use grams or kilograms to measure each of these objects?

an apple _____

a marble _____

a tiger _____

a boulder _____

20 apples _____

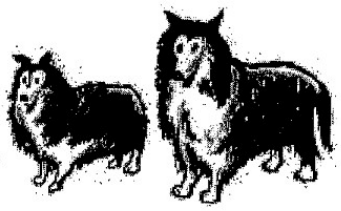
a grown child _____

a toothpick _____

15 marbles _____

6. The mass of the small dog is 15 kg.
What might be the mass of the large dog?

_____



7. Circle the best estimate for the mass of each object.

a) a marble: 1 g OR 100 g OR 1 kg

b) a hockey puck: 1 g OR 100 g OR 1 kg

c) a dictionary: 1 g OR 100 g OR 1 kg

8. The mass of a brick is about 1 kg. How can you use the mass of the brick to estimate the mass of another object?

_____

_____

_____

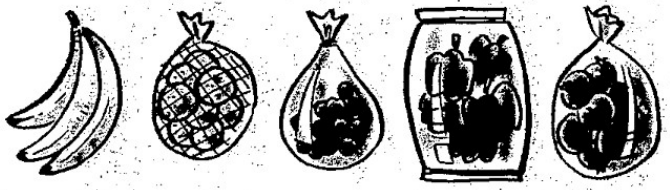
Chapter 10 Lesson 9

Measuring Mass in Kilograms and Grams

GOAL

Estimate and measure mass using kilograms and grams.

These groceries are sold at the fruit and vegetable store in Joseph's neighbourhood.



bananas	oranges	cherries	peppers	tomatoes
500 g	2 kg	200 g	1 kg	3 kg

At-Home Help

1000 g = 1 kg
For example,
500 g + 400 g + 100 g
= 1000 g, or 1 kg

1. Joseph bought oranges, peppers, and tomatoes.
What was the total mass of his groceries?

2. Luisa bought bananas and cherries.
What was the total mass of her groceries?

3. Sara bought bananas, cherries, and peppers.
What was the total mass of her groceries?

4. Thomas bought bananas, oranges, cherries, peppers, and tomatoes.
What was the total mass of his groceries?

Chapter 10 Test Yourself

Circle the correct answer.

1. What is the best unit for measuring the time you take to eat breakfast?

A. seconds **B.** minutes **C.** hours **D.** days

2. What is the best unit for measuring the length of a vacation?

A. seconds **B.** minutes **C.** hours **D.** days

3. What is the best estimate for the length of a movie?

A. about 2 seconds
B. about 2 minutes
C. about 2 hours
D. about 2 days

4. Lee went to visit his grandmother on August 11. He came back on August 27. How many days was Lee's visit?

A. 16 days
B. 6 days
C. 10 days
D. 38 days

August

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23/30	24/31	25	26	27	28	29

5. Which object is most likely to have a mass of about 1 kg?

A. a popsicle
B. a pencil
C. a textbook
D. a paper clip

6. Which object is most likely to have a mass of about 1 g?

A. a mug of hot chocolate
B. a grape
C. a baby
D. a car

7. Pierre bought 500 g of almonds, 300 g of raisins, and 2 kg of flour. What was the total mass of his groceries?

A. 2 kg and 800 g
B. 1000 g
C. 802 g
D. 10 kg and 2 g