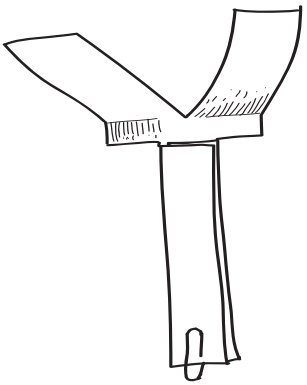
LETTER TO PARENTS

Cut here and paste on school letterhead before making copies.

SCIENCE NEWS



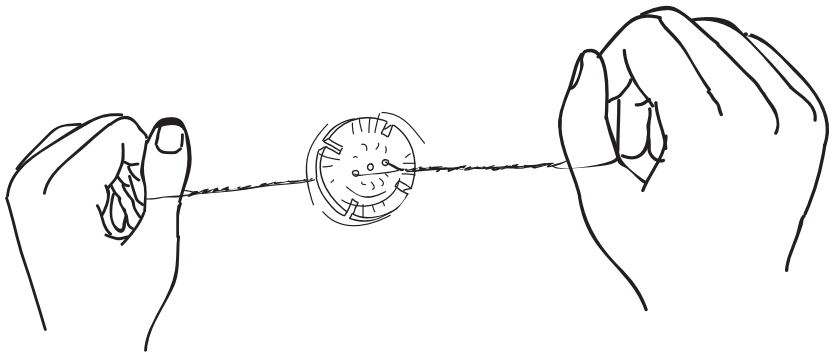
Dear Parents,

Balance and Motion is the new unit we are studying in science. We will be observing and comparing how objects balance, spin, and roll, and communicating orally and in writing the things we discover. The processes of observing, communicating, and comparing are important thinking processes that your child will be using during our investigation of these interesting characteristics of objects and systems.

Your child may be interested in trying some things at home. You might want to tie a string between two chairs and see how many paper cups, craft sticks, and other objects you can balance (use clothespins for counterweights). You could make a big mobile by suspending a broomstick and hanging things from it, or make spinning tops out of Tinkertoys™ or other shafts and hubs. Check your local toy store for tops and other spinners. The possibilities are endless, and your child can be your guide.

We're looking forward to our new unit on balance and motion to provide lots of learning and lots of fun!

Sincerely,

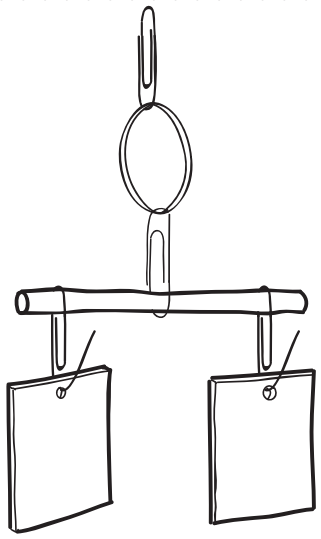


Name _____ Date _____

MATH EXTENSION A

INVESTIGATION 1: BALANCE

Jill, Joy, Randy, and Roy each made a mobile like this one. ➔



How many rubber bands did they use? _____

How many straws did they use? _____

How many cards did they use? _____

How many paper clips did they use? _____

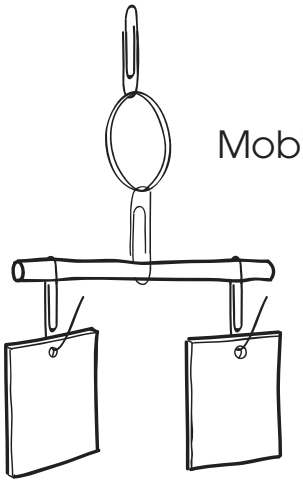
Name _____ Date _____

MATH EXTENSION B

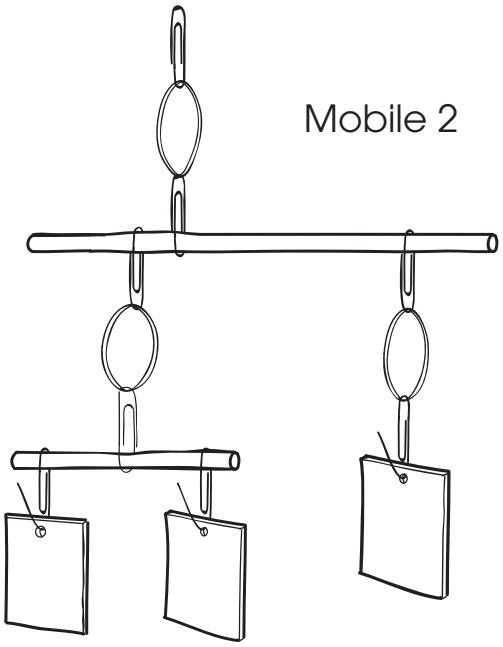
INVESTIGATION 1: BALANCE

Ms. Giffin's class has 20 students. Half the class decided to make mobile 1, and half the class decided to make mobile 2.

How many straws, paper clips, rubber bands, and cards did she need to have ready for all the students to make a mobile?



Mobile 1



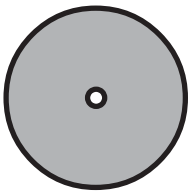
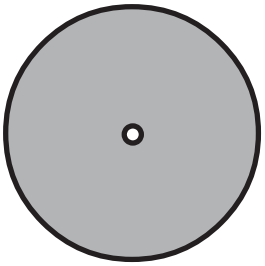
Mobile 2

Name _____ Date _____

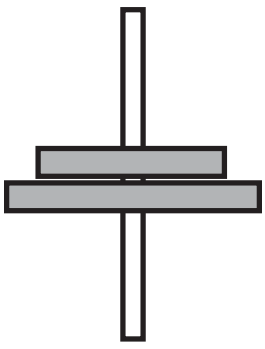
MATH EXTENSION A

INVESTIGATION 2: SPINNERS

INVENT A TOP !

Choose a shaft from this group.	Choose one or more disks from this group.
5¢ Short	5¢ Small 
10¢ Medium	10¢ Medium 
25¢ Long	25¢ Large 

Draw a new top. What will the top cost? Example:



25¢
10¢
+10¢
45¢

Draw a top that will cost $1.00.

Name _____ Date _____

MATH EXTENSION B

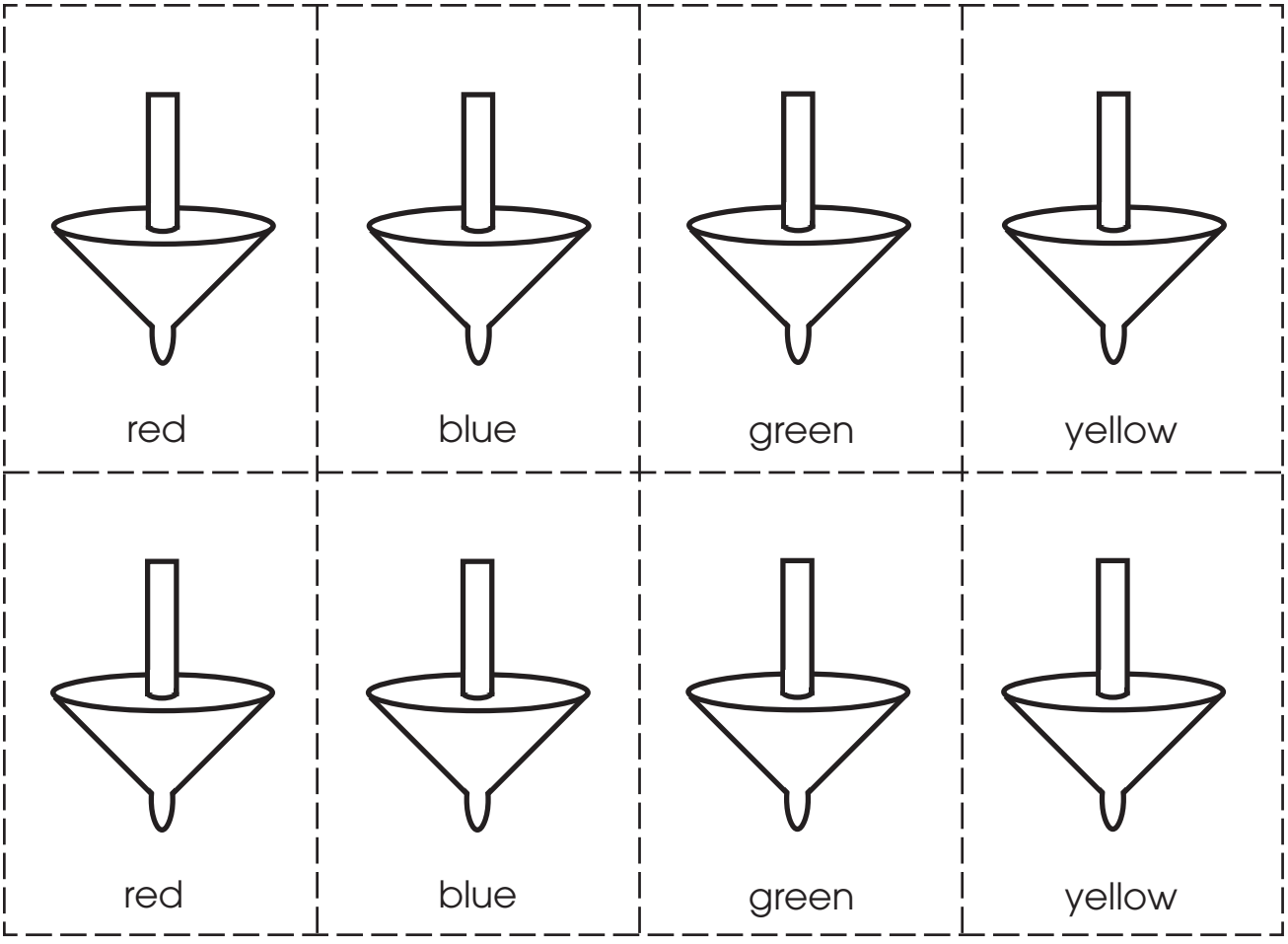
INVESTIGATION 2: SPINNERS

Top Lineup!

Color the tops on the cards below. Cut the eight cards apart on the dashed lines.

As your teacher reads the clues, line up the tops according to what each clue tells you.

Compare your lineup with a partner's and see if you agree.



MATH EXTENSION B—TEACHER SHEET

INVESTIGATION 2: SPINNERS

Top Lineup!

This math extension requires students to use logic and understanding of position to put tops in the order suggested by the clues. After students have colored and cut apart the top cards, read each set of clues and have students line up the tops. Pause after each clue long enough for students to rearrange their tops.

Top Lineup 1

Clue 1—There are five tops in a line.
(No action needed.)

Clue 2—Two tops are red. Two tops are blue. One top is green.
(Students select tops from total group.)

Clue 3—A red top is in the front of the line. Two blue tops are at the end of the line.
(Students line up a red top in front, place two blue tops at the end, leaving space for tops that will go in between.)

Clue 4—A red top is in the middle of the line.
(Students decide where to place the final two tops that are red and green.)

Answer from front to back of the line: Red, green, red, blue, blue.

Top Lineup 2

Clue 1—There are two red tops, two blue tops, two green tops, and two yellow tops.

Clue 2—One blue top is first in line. One blue top is last in line.

Clue 3—Two red tops are just in front of two yellow tops.

Clue 4—One green top is just behind two yellow tops in the line.
One green top is just in front of two red tops in the line.

Answer from front to back of the line: Blue, green, red, red, yellow, yellow, green, blue.

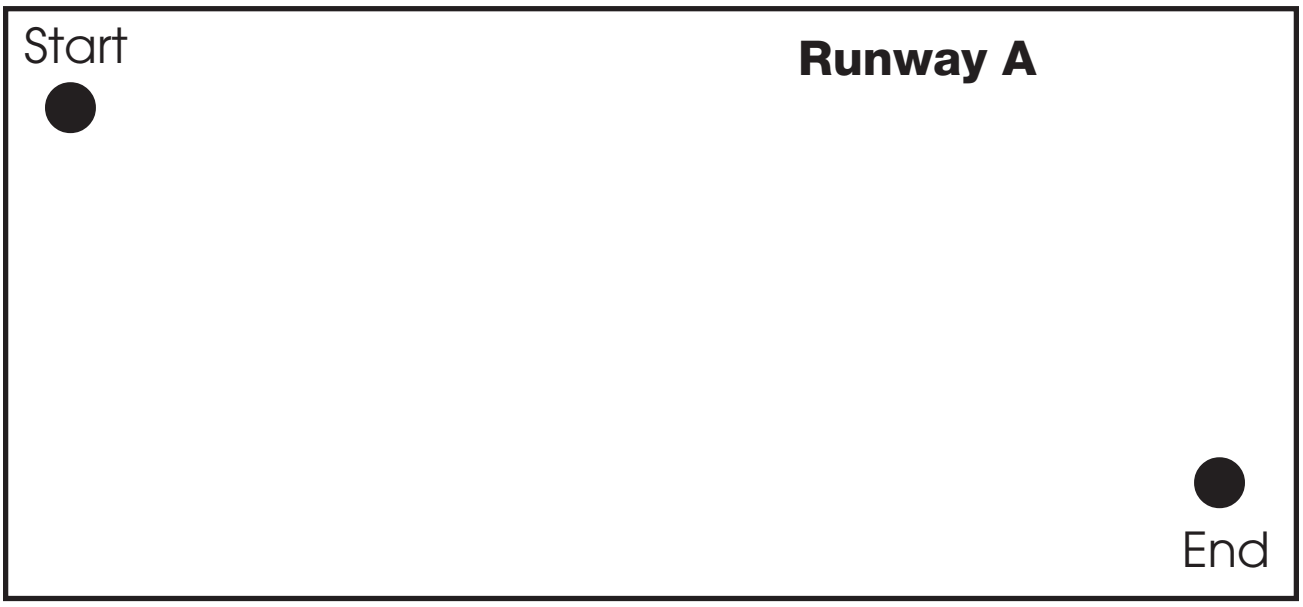
Name _____ Date _____

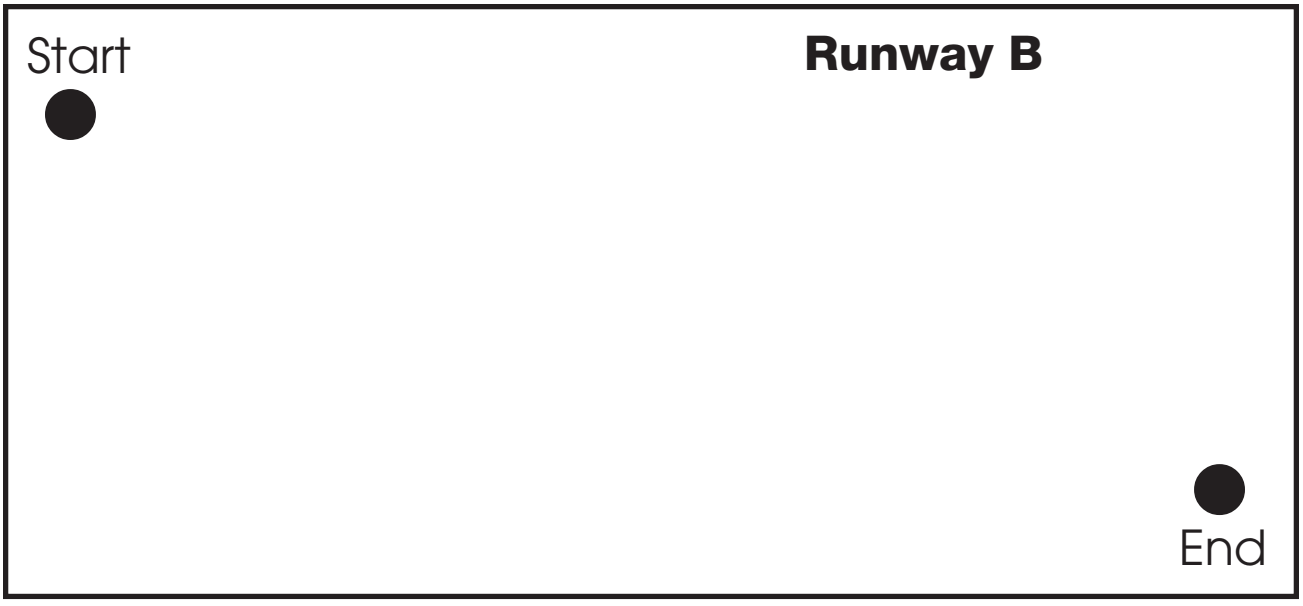
MATH EXTENSION A

INVESTIGATION 3: ROLLERS

Draw two runways that a marble might roll through from top to bottom.

Which one do you think is longer? _____
Can you prove it?

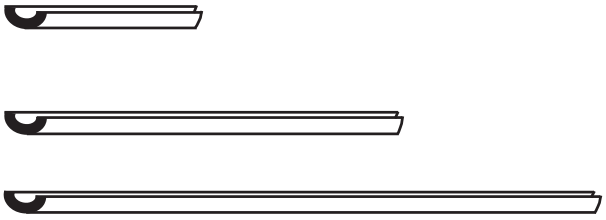




Name _____ Date _____

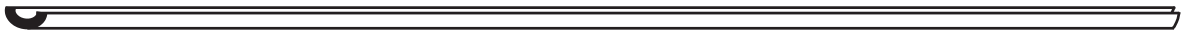
MATH EXTENSION B

INVESTIGATION 3: ROLLERS



Which runway pieces above can be used to make the long runway shown below?

How many different ways can you make the long runway?



HOME/SCHOOL CONNECTION

INVESTIGATION 1: BALANCE

Dear Parents,

In class, we have been exploring balance. We've learned how to balance all kinds of shapes by adding clothespins, which act as counterweights. Here are some fun movements to explore together and some questions to ask your child that might lead to interesting discussions about balance, weight, and counterbalance.

Try this!

- Compare standing on one foot with your eyes closed and with your eyes open.

  Which is easier? Why do you think that might be?

- Compare standing on one foot, standing on two feet, and sitting on the floor.

  Which do you think is the most stable—easiest to maintain balance without falling over? Why do you think that might be so?

- Stand with your heels against a wall. Now bend over to pick up an object on the floor.

  What happens? Why do you think it happens?

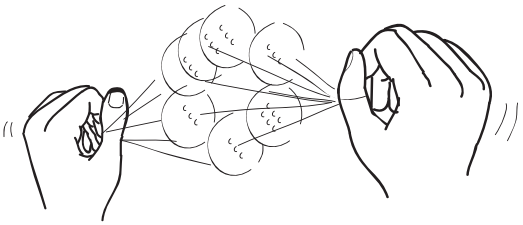
- Try to get up from a chair without moving your hands or leaning.

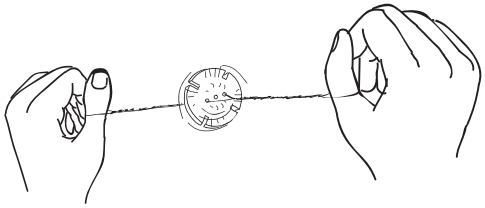
  What happens? What do you need to do to get up?

HOME/SCHOOL CONNECTION

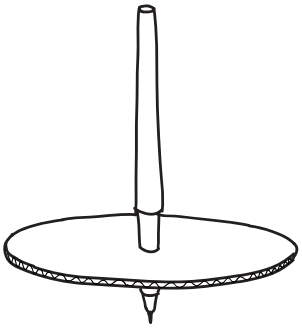
INVESTIGATION 2: SPINNERS

ZOOMERS: Traditional zoomers are made from a button and a piece of string. The string is strung through the button holes and tied to make a loop. When you twirl it around to put a twist in the string and pull it tight to unwind, the button will spin.





TOP: Cut a 13- or 15-cm (5- or 6-inch) circle from a piece of cardboard. Poke a hole in the center big enough for a pencil or felt-tipped pen.



Some things to try

- Add more cardboard disks to the top.
- Compare zoomers made with a big and a little button.
- Add a spinning design to a top or zoomer.

  (The best way to see the spinning design on a zoomer is to reorient the zoomer by bringing one hand in front of your face and moving the other hand away from you. Make the zoomer go fast or slow and watch the design change.)
- Make tops from different materials.
- Try anything you can think of—be curious!

What did you make?

What did you try?

What happened?

Name _____ Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 3: ROLLERS

Look for things that roll or spin in your home or neighborhood. Rollers and spinners might be found in any room of the house, in a tool box, in a toy box, or outside. Two examples are given to start off your hunt.

Rollers	Spinners
car wheels	water going down the drain