Go Deeper with Young Learners Using Sketchpad®

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Availability of Materials

The worksheets and sketches used in this workshop will be available on the web at
http://www.keypress.com/sketchpad/general_resources/recent_talks

Other Links

Key Curriculum Press®
http://www.keypress.com

Sketchpad Activities for Young Learners
http://www.dynamicgeometry.com/syl

The Geometer's Sketchpad® Resource Center
http://www.keypress.com/sketchpad

Sketchpad Mailing List
http://www.keypress.com/sketchpad/feedback/mailing_list.php

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For more information
http://www.dynamicgeometry.com/syl
sketchpad@keypress.com

Rectangle Roundup Name:

Explore rectangles that have the same perimeter.

EXPLORE

1. Open **Rectangle Roundup.gsp.** Go to page "Rectangle."

Find out how rectangle *ABCD* behaves by dragging points *A*, *B*, and *D* one at a time.

2. Go to page "P=16."

   Drag a point and watch the measurements. As you change the side lengths, what happens to the area?

   Make two rectangles that have a perimeter of 16 centimeters.

   What do you note about the area of the two rectangles?

   _____

3. Go to page "P=16 Table."

   Make rectangles with a perimeter of 16 centimeters. Make all you can.

   Each time you make a new rectangle, double-click on the table to enter measurements.

4. What is the rectangle with the largest area you can make?

   _____

5. What is the rectangle with the smallest area you can make?

   _____

EXPLORE MORE

6. Go to page "Extend." Make rectangles with a perimeter of 24 centimeters. Record in the table.

7. What do you note about the area and perimeter measurements? Write on the back of this sheet.

Spinner Experiments Name:

Use data to figure out what hidden spinners may look like.

EXPLORE

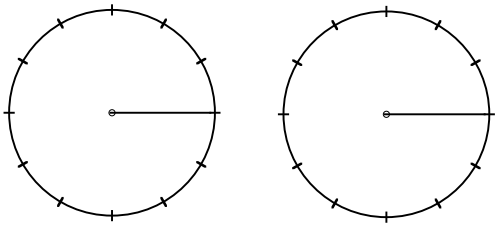
1. Open **Spinner Experiments.gsp**. Go to page "Make Your Own."
2. Take turns making and hiding a spinner.

To make a spinner, drag point *B*. Then press *Hide Parts*.

On your turn to spin, spin 600 times. Below, record the spins and shade the circles.

A.

Expected Actual



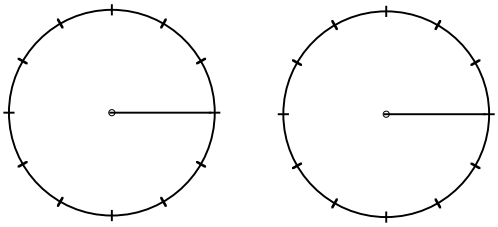
Number of Spins _____

Blue _____

Yellow _____

B.

Expected Actual



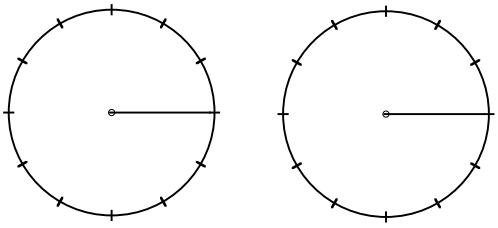
Number of Spins _____

Blue _____

Yellow _____

C.

Expected Actual



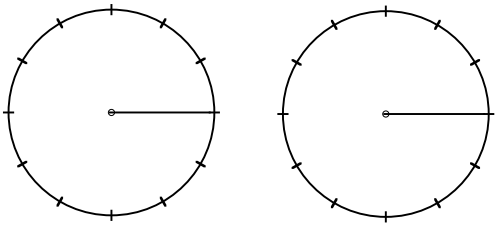
Number of Spins _____

Blue _____

Yellow _____

D.

Expected Actual



Number of Spins _____

Blue _____

Yellow _____

3. Tell about one or more of the spinners that surprised you.

_____

_____

EXPLORE MORE

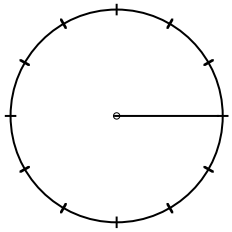
4. Two students spun a hidden spinner. Here are the results.

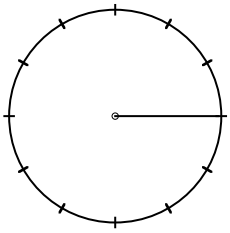
Number of Spins	600
Blue	247
Yellow	353

Two other students spun another hidden spinner. Here are the results.

Number of Spins	600
Blue	281
Yellow	319

What might each pair's spinner look like? Draw and tell about your thinking.





_____

_____

_____

5. Use the spinner model to test your thinking about the pairs' spinners.

Write about what you try and what you are thinking now.

_____

_____

Reflect and Trace Name:

Explore a point and its reflection.

CONSTRUCT

1. Open a new sketch.

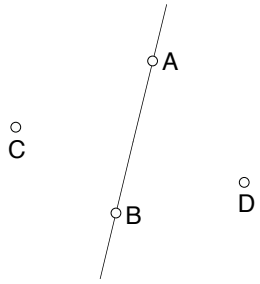
2. Construct a line *AB*.

Draw a point *C* that is not on the line.

Select line *AB* and choose **Transform | Mark Mirror**.

Select point *C* and choose **Transform | Reflect**.

Change the label of point *C*'s reflection. Call it point *D*.



EXPLORE

3. Drag point *C* around.

   What happens to point *D*?

   _____

4. Find a place where points *C* and *D* come together.

   Where else do they come together?

   _____

5. Select points *C* and *D* and choose **Display | Trace Points**.

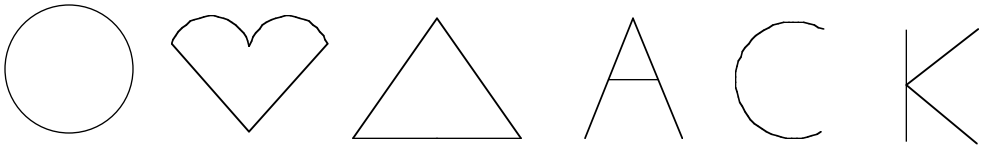
6. Select <u>just</u> point *C*. Drag it.

   How does the trace of point *D* compare to the trace of point *C*?

   _____

7. Choose **Display | Erase Traces**. Drag point *C* again to make a new picture.

8. Points *C* and *D* can work together to make the images below. Try it!



EXPLORE MORE

9. For fun, select point *C* and choose **Display | Animate Point**.

   Stop the animation. Choose **Display | Stop Animation**.

10. Select your reflection line and points *A* and *B*.

    Choose **Edit | Action Buttons | Hide Show**. The new button lets you hide or show the reflection line.

    Play this game with a partner. Take turns.

    - Player 1 looks away.
    - Player 2 moves the line and presses *Hide Objects*.
    - Player 1 tries to find the line by dragging point *C*.
    - Check by pressing the button.