Poster and Teaching Guide

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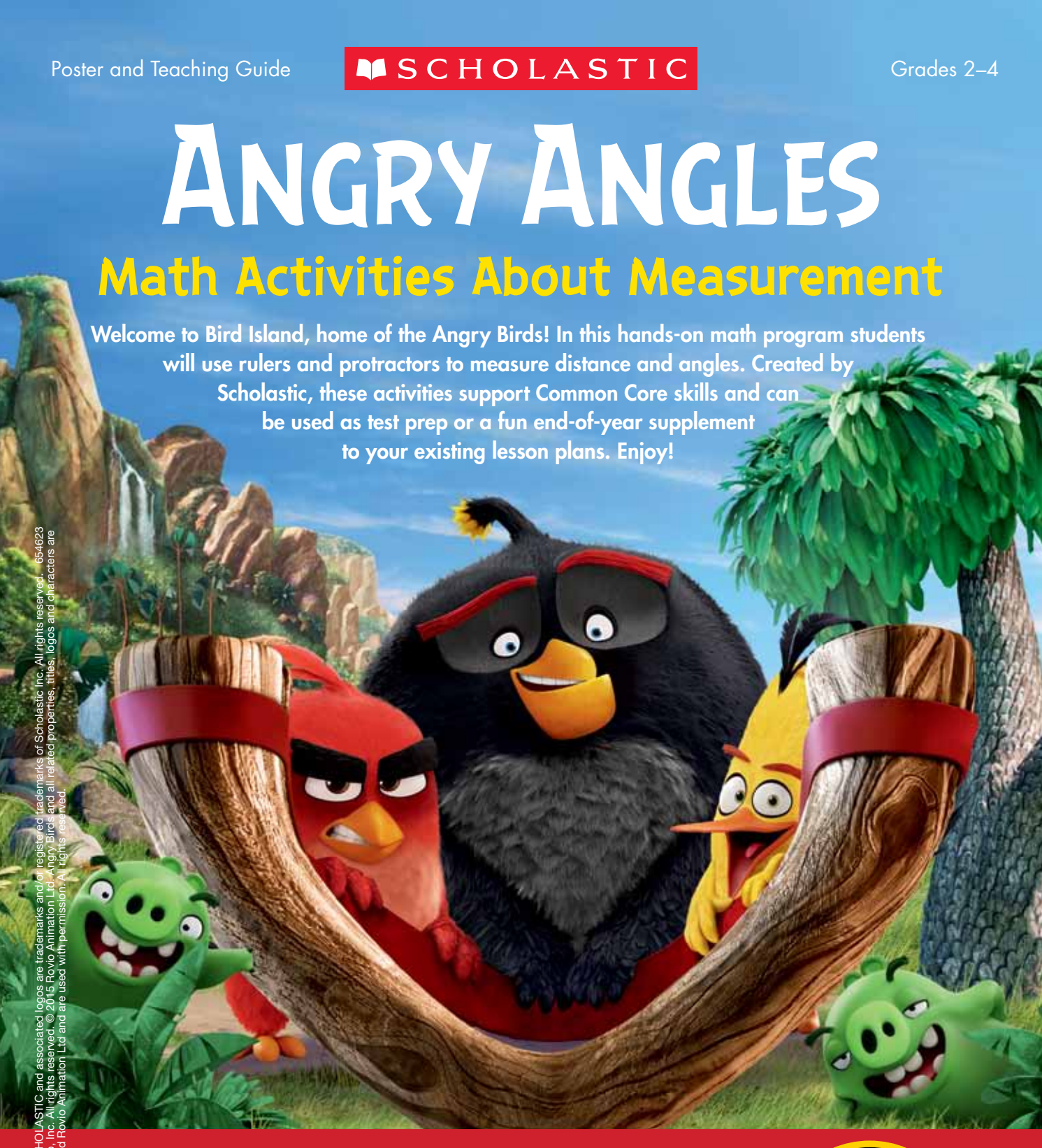
Grades 2–4

Angry Angles

Math Activities About Measurement

Welcome to Bird Island, home of the Angry Birds! In this hands-on math program students will use rulers and protractors to measure distance and angles. Created by Scholastic, these activities support Common Core skills and can be used as test prep or a fun end-of-year supplement to your existing lesson plans. Enjoy!



Visit scholastic.com/angrybirdsmovie for a downloadable version of this program.

Teacher Page

Activity Instructions

Lesson 1 Hatchling Height Challenge

Time required: 30 minutes
Materials: "Hatchling Height Challenge" Student Worksheet A, ruler

What to do:

1. **Review** the concept of *length* by asking students how they could measure the length of their pencils without a ruler (e.g., with fingers, paper clips, erasers).
2. **Share** the following trivia fact! *The English word* inch *comes from the Latin word* uncia, *which means "one-twelfth part," as in* 1/12 *of a foot. For many centuries, one inch was defined as the width of a man's thumb and later defined as three grains of barley placed end to end lengthwise.*
3. **Complete** Student Worksheet A. Emphasize that students should measure to the nearest **half inch**. Remind them that not all measurements/letters will be used to answer the riddle. **Answer key:** Height of perches from left to right: 5", 1", 3½", 2", 3"; EGGS.

Lesson 2 Measurement Mission

Time required: 30 minutes
Materials: "Measurement Mission" Student Worksheet B, "Matilda's Toolbox" Student Resource Sheet, ruler, protractor (optional)

What to do:

1. **Distribute** the worksheets to each student and discuss the glossary terms.
2. **Ask** the students to explain the difference between measuring *length* and measuring *angles*.
3. **Read** Student Worksheet B with your class.
4. **Provide** class time for them to complete the mission. Encourage students to label the lengths of each segment of the pathway on the worksheet as they go. Measurements of all line segments should be made to the **nearest inch**. (Answer: Only Chuck will reach the Hatchlings.)
5. **Ask** students to explain the reasoning strategies that they used to solve the problem. For example, how did they eliminate each bird that did not rescue the eggs?

For younger students:

Complete the worksheet as a class. Reinforce careful ruler work and discuss the different kinds of angles using the classroom poster.

Lesson 3 Angry Angles Attack

Time required: 30 minutes
Materials: "Angry Angles Attack" Student Worksheet C, protractor (optional), scrap paper, textbook, straightedge

What to do:

1. **Break** students into small groups of 3–4 and conduct the following inclined ramp experiment.
   A. Wad up a piece of scrap paper into a small ball and angle a textbook as a "launching ramp" for the ball.
   B. Have each student make several attempts at "launching" the ball by flicking it with his or her finger.
   C. Each time the ball is launched, have the student change the angle of the launching ramp by stacking erasers, notebooks, or other small objects under the book that is being used as the launching ramp.
   D. Ask students to observe correlations between the angle of the launching ramp and the height at which the ball hits the wall.
2. **Complete** Student Worksheet C. Review the use of a protractor as needed. **Answer key:** Angles in the left column are: obtuse (135°), right (90°), acute (30°).
3. **Ask** which is more important in launching a bird: force or angle? (They are both important.) In what ways can people use knowledge of angles in life outside of school (e.g., sports)?

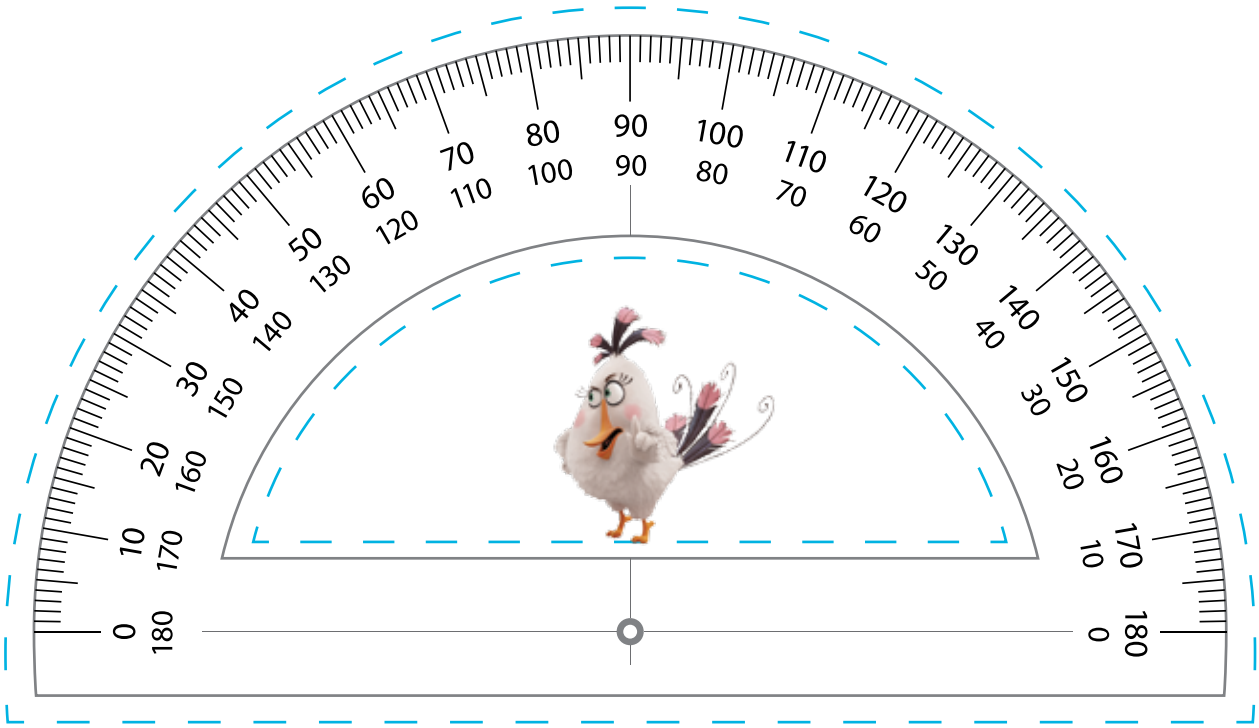
Angry Angles Poster Activity

Hang the classroom poster on a corkboard and read it together. Cut out a protractor (including the middle) for each student and collect six pushpins, a thick marker, a yardstick, and red yarn (optional). Distribute the Angry Angles Instruction Sheet and work as a class to fix the slingshot!

Student Resource Sheet

MATILDA'S TOOLBOX

Matilda's protractor and glossary can help you stay calm under pressure. Cut them out and keep them handy as you explore the Angry Angles lessons!



MATH GLOSSARY

Length: the distance between two points.

Angle: the amount of separation between two rays (lines) that meet at a common end point.

Acute angle: an angle measuring greater than 0 degrees and less than 90 degrees.

Obtuse angle: an angle measuring greater than 90 degrees and less than 180 degrees.

Right angle: an angle measuring exactly 90 degrees.

Straight angle: an angle measuring exactly 180 degrees (also known as a straight line).

Student Clue Sheet
For 8.5" x 11" poster

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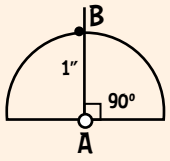
Angry Angles Poster: Instruction Sheet For 8.5" x 11" Poster

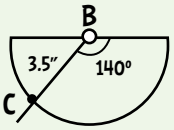
Hold your protractor to match the pictures and follow the steps to draw lines that will fix the slingshot.

Step 1: Look at your protractor. Place a pushpin into the center of the "bull's-eye" on the straight side and place it directly over the (A). Line up the line next to the bull's-eye with the line next to the (A).

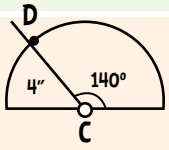
Step 2: Use a ruler to measure 1" up from the (A), at a 90° angle. Place a dot at the end point and label it (B). Connect points (A) and (B) with a straight line.



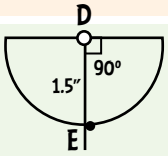
Step 3: Move your protractor so the pushpin is on top of point (B) and facing down like the picture. Measure 3.5" at a 140° angle. Place a dot at the end point and label it (C). Connect points (B) and (C) with a line.



Step 4: Move your protractor so the pushpin is on top of point (C). Measure 4" up, at a 140° angle. Place a dot at the end point and label it (D). Connect points (C) and (D) with a line.



Step 5: Move your protractor so the pushpin is on top of point (D). Draw a 1.5" line, at a 90° angle. Place a dot at the end point and label it (E). Connect points (D) and (E) with a line.



Step 6: Draw a line to connect points (E) and (C). Draw another line to connect points (C) and (A).

Step 7: Ask your teacher to place a pushpin on top of each of your five points. Carefully wind a piece of yarn around the pushpins to outline your slingshot!

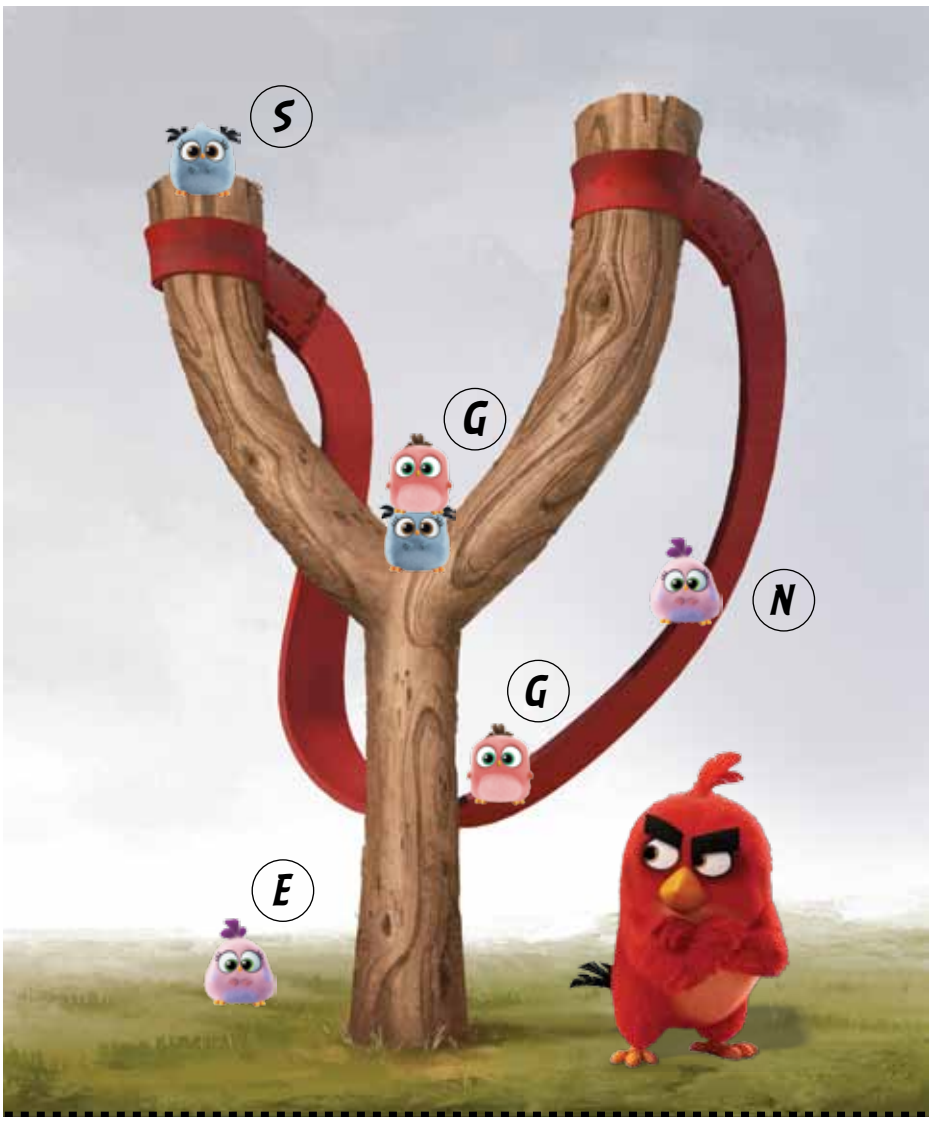
The Rule of Two: Read and measure each clue TWICE before you make any marks!

Student Worksheet A

Name

Hatchling Height Challenge

Measure the height of each Hatchling's hiding place from the dotted line to the top of its head (to the nearest half inch). Then write the letter of each Hatchling in the blank at the bottom of the page that matches the height of its hiding place. (Not all of the letters will be used.)



Riddle: What do you call very young hatchlings?

1"	2"	3.5"	5"

Student Worksheet B

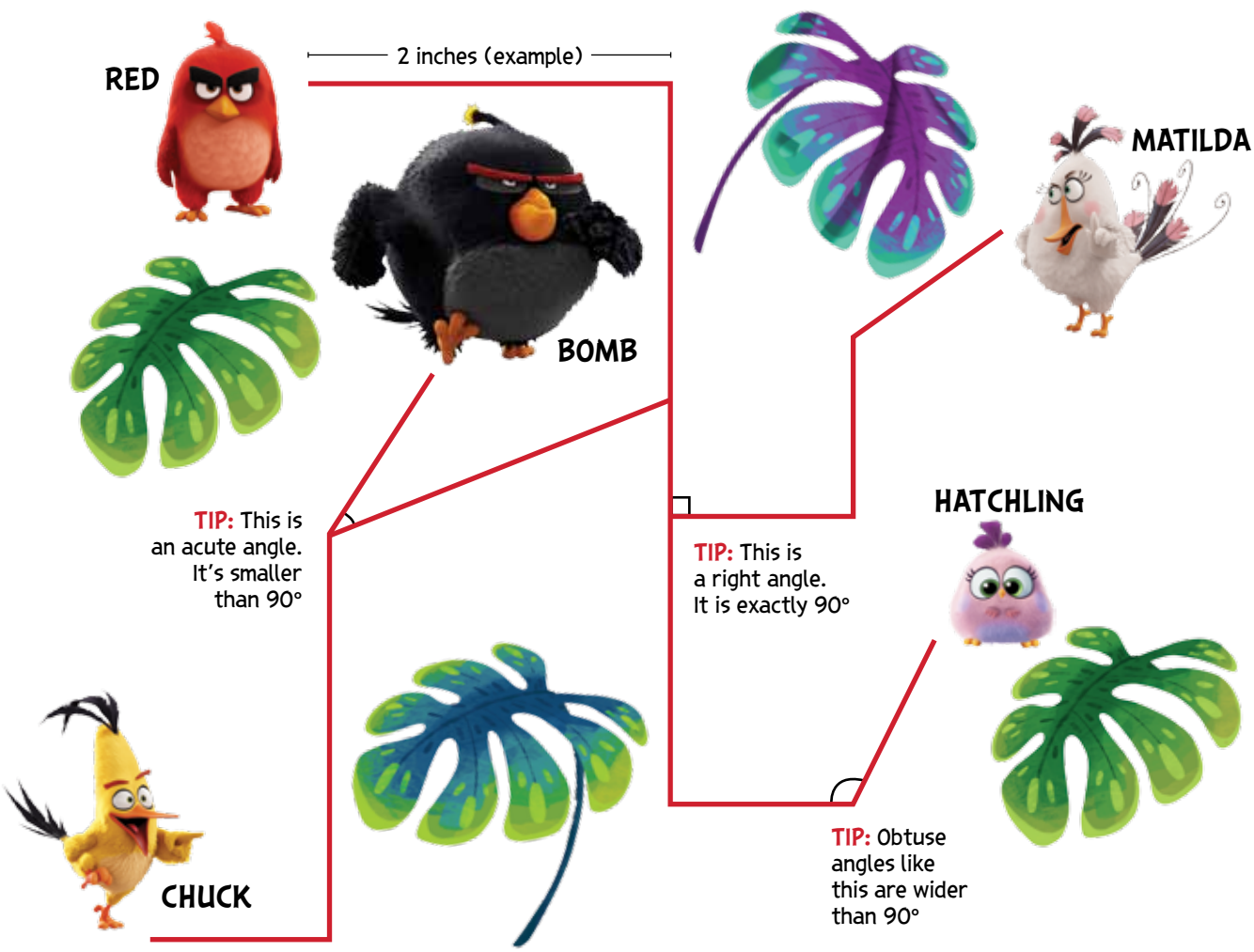
Name

MEASUREMENT MISSION

The Hatchling is hiding! Only one bird can find her, but who will it be? Measure and label the length of each line below. Then fill in the chart to discover the answer!

RULES:

	WILL HE/SHE FIND THE HATCHLING?
Matilda won't travel more than 5 inches in all. What's the total length of her path to the Hatchling? _____	YES NO
Red won't travel on any path that makes a right angle. Does his path have a right angle? _____	YES NO
Chuck won't travel more than 14 inches in all. Measure his path. _____	YES NO
Bomb will travel any distance but acute angles scare him. Is there one on his path? _____	YES NO

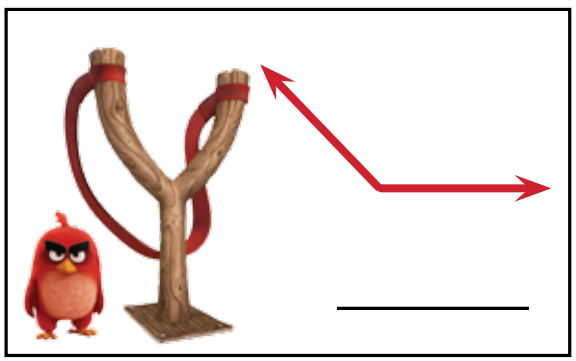


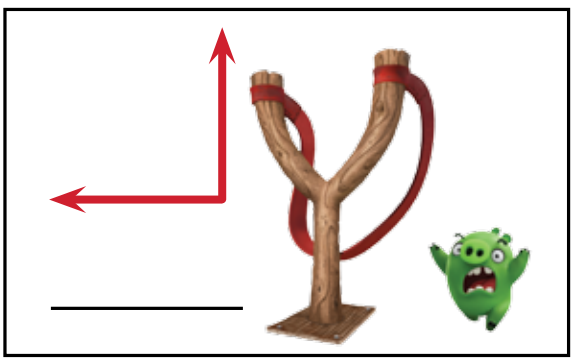
Student Worksheet C

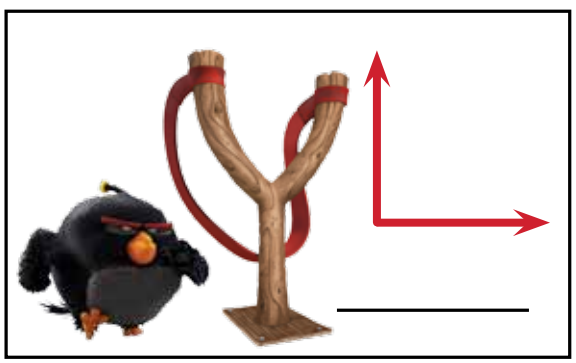
Name

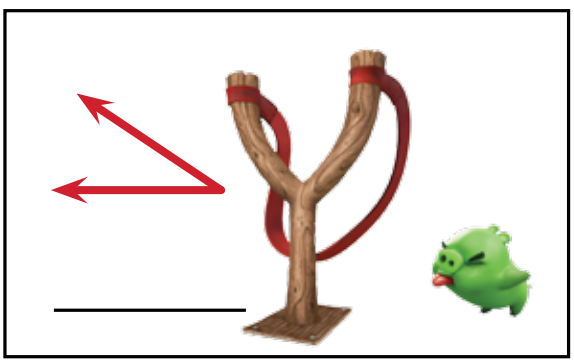
Angry Angles Attack

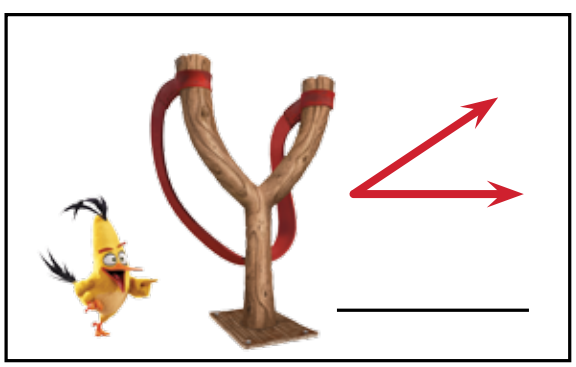
Help Red get the eggs back! Label each angle (right, obtuse, or acute). Then draw a line to match each drawing in the left column with a drawing in the right column that is the same type of angle.

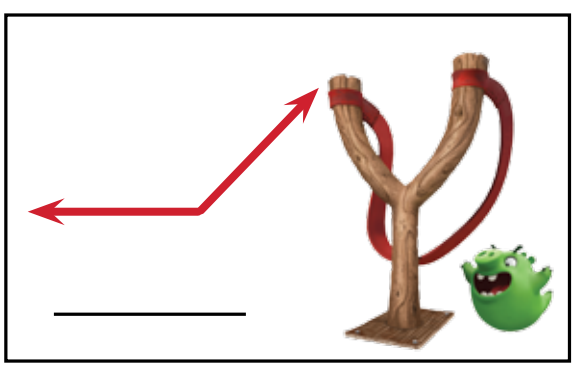








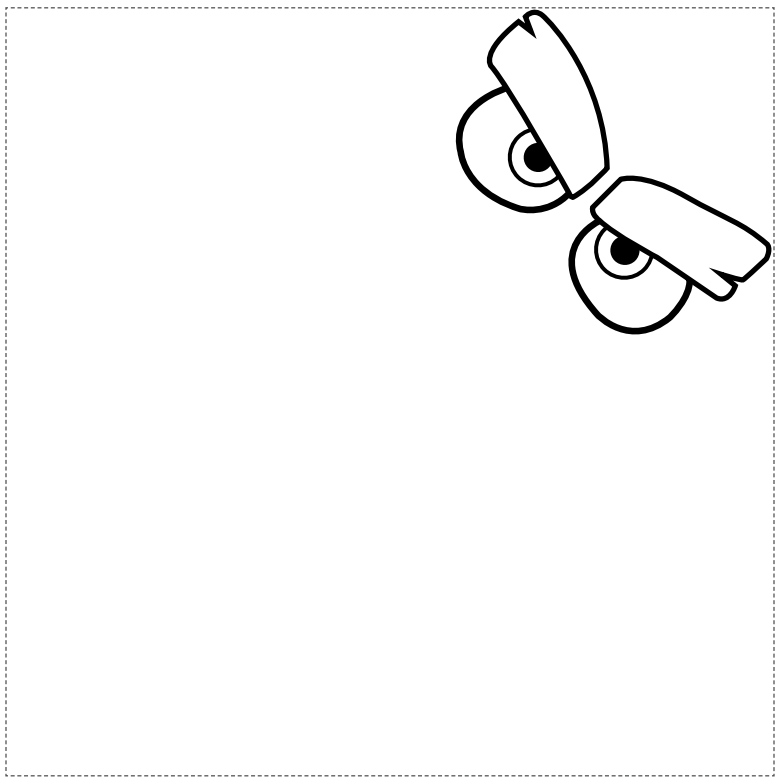


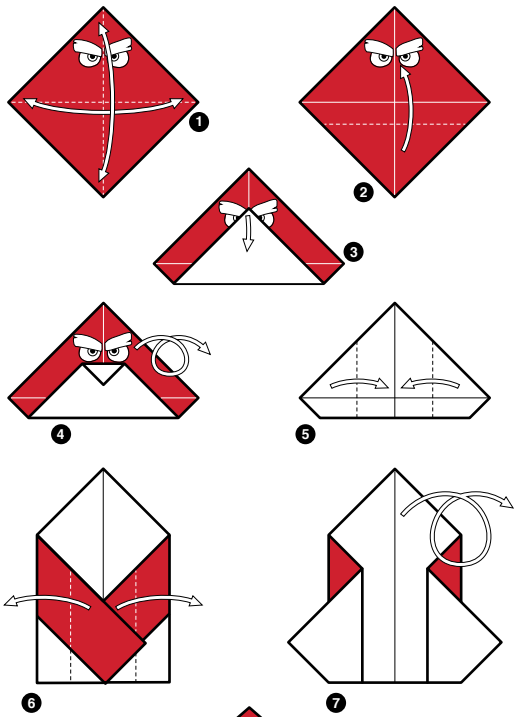


Bonus: Use a protractor to measure each angle!

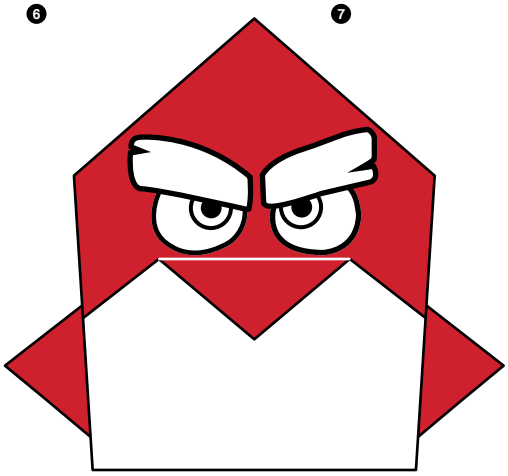
Angry Origami!

Help your child color the square red and cut it out. Then follow the instructions to create your family's own Angry Bird!





This worksheet is part of a series of activities about measurement and angles. Created by Scholastic and Sony, the activities support Common Core skills and had us using rulers and protractors to measure perimeter, angles, and distance all while exploring the world of Angry Birds! Ask your child what he or she learned.



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ANGRY ANGLES

This slingshot is busted! Help Red, Bomb, and Chuck fix it using the instructions at scholastic.com/angrybirdsmovie. Just use your ruler and protractor to approach the problem from the right (or obtuse or acute) angle!

ACUTE ANGLE

Less than 90°

RIGHT ANGLE

Exactly 90°

STRAIGHT ANGLE

Exactly 180°

OBTUSE ANGLE

Greater than 90°

THE ANGRY BIRDS MOVIE™

IN THEATERS MAY 20, 2016

angrybirds-movie.com