## Tips for Helping at Home

- Questions to ask:

  What is it that you don't understand (have the student be specific)?

  What about putting things in order?

  Could you try it with simpler numbers?

  Can you guess and check?

  Does this make sense?

  What can you do to explain your answer to show others what you are thinking?

  Does your answer seem reasonable?

- Talk with your child about paths you walk inside and outside the house. What directions would you give for the paths?

- Listen to your child's plans for his or her "face" design, the final project in the unit. You child can explain to you how the plan on paper becomes a computer program.

- If possible, download the Turtle Paths software. You will need the password from your student's teacher.

  http://investigations.scottforesman.com/turtle.html

- Continue computation practice with array cards and addition fact cards if necessary.

## Mathematical Emphasis

**Investigation 1—Paths and Length of Paths**

- Understanding paths as representations or records of movement

- Using Geo-Logo commands to construct paths and describe their properties

- Applying mathematical processes such as addition, subtraction, estimation, and "undoing" to paths

**Investigation 2—Turns in Paths**

- Using degrees to measure turns, especially full, half, and quarter turns, estimating turn measures in degrees

- Describing the properties of triangles

**Investigation 3—Paths with the Same Length**

- Constructing geometric figures that satisfy given criteria, using analysis of geometric situations, arithmetic, and problem-solving strategies

- Understanding that shapes can be moved in space without losing their geometric properties

- Estimating and measuring the perimeters of various objects

## Websites

http://cms.everett.k12.wa.us/math/Third Grade

**Get the Turtle to the Pond**

http://illuminations.nctm.org/LessonDetail.aspx?ID=L396

**Ladybug Mazes**

http://standards.nctm.org/document/eexamples/chap4/4.3/standalone3.htm

Investigations
in Number, Data, and Space

# Grade 3

# Turtle Paths

## 2-D Geometry

Everett Public Schools

## Vocabulary

angle—the amount of turning between two lines meeting at a common point

properties—common feature or characteristic

equilateral triangle—a triangle with 3 equal sides and 3 equal angles.

path—movement without turns

turn—a rotation or change in direction and creates a corner in the path.

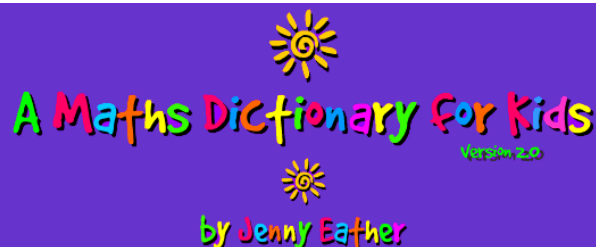closed path—paths whose starting and ending points are the same.

shape—figure, form or outline of anything

### Glossary

http://www.amathsdictionaryforkids.com/

A Maths Dictionary for Kids
Version 2.0
by Jenny Eather

## Building Strong Concepts

In this unit students are asked to invent their own definitions. Wouldn't it be more efficient to just give them the correct definition? Usually not, for several reasons.

First, mathematics is not just "knowing" the definition. Real mathematical activity includes forming and arguing about definitions.

Second, students do not think with definitions. They use "concept images" - a combination of all the mental pictures and ideas they have associated with the concept.

For example, students who see only "typical" triangles may say that figures are not triangles if they do not have a horizontal base or if they are long and skinny.
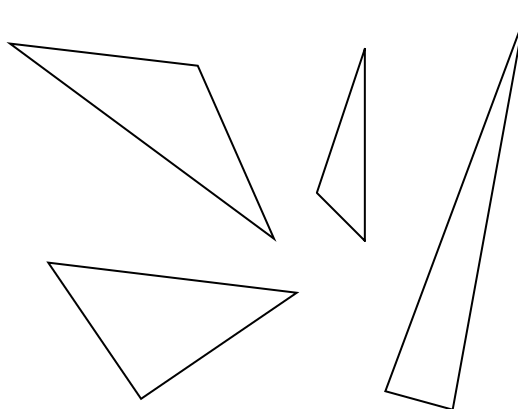
Clements, D. Investigations in Number, Data, and Space:  Turtle Paths. Dale Seymour Publications, 1998.

## Game

### The Maze Game

**Materials:**

Student Sheet 1

counters

2 dice or number cubes

**2 people**

**How to Play:**

Choose and label a Finish dot on the student sheet. Taking turns, a player rolls the two number cubes, adds the numbers, and moves his or her counter that many steps.

The player cannot pass another player's counter.

If the path is blocked, the player needs to look for a different path.

The player who reaches the Finish dot first wins.

Start