

EGG ROLLS

Teaching Guidelines

Subject: Mathematics

Topics: Geometry (polygons), Measurement (distance, time, speed), Statistics

Grades: 3 - 5

Concepts:

- Polygon
- Vertex
- Speed

Knowledge and Skills:

- Can divide a two-digit number by a two-digit number (distance by time)
- Can measure lengths
- Can determine speed, given distance and time
- Can compute an average

Materials (for each team):

- 2 hard-boiled eggs (one is a spare)
- 1 plastic spoon
- 1 measuring tape (English or metric units)
- 1 roll of masking tape
- 1 stop watch (preferred) or any watch which can be read to the nearest second.

Procedure:

Arrange students into teams of 4 to 6 members each. Each team will need an open area of about 20 feet by 20 feet.

Distribute the handout and use one team to demonstrate how to make the polygon and how to play the game. (You may choose the unit of length to be used: inches, feet, centimeters or meters.)

Each team should complete three trials, compute the speed for each trial, and then their average speed. (For younger students, or to shorten the time taken by the activity, you may wish to have only one trial per team.)

The winning team is the one with highest average speed for all three trials.

Questions for discussion:

- Does it matter that all of the teams do not travel exactly the same distance around their polygons? (No, since winning depends on speed, not only time and not only distance).
- Think about the speed for one of your team's trials. Did the egg travel at exactly that speed all the way around the polygon? How does the speed for each team member affect the speed for the whole trial?

How to Play "Egg Rolls"

Part A: Make the polygon

1. Make a polygon with the other members of your team:
 - Each team member is a vertex of the polygon.
 - The perimeter of the polygon must be between 45 and 60 feet.
 - No two team members are to be closer than 5 feet.
2. Tape a sheet of paper at the feet of each team member, and write the numbers, "1", "2", "3", "4" and so on at each vertex as you move around the polygon from one vertex to the next.
3. Use masking tape to make the line segments that are the sides of the polygon.

Part B: Roll the egg

Starting at vertex #1, the first team member uses a plastic spoon to roll a hard boiled egg to vertex #2. Do NOT touch the egg with your hand! The next team member rolls the egg to vertex #3. Continue like this until the last team member gets back to vertex #1.

Measure the amount of time it takes to get all the way around the polygon.

Measure the perimeter of the polygon.

Divide to find the speed for the team.

The fastest team wins.