

DISTANCE ACTIVITY



MATHEMATICS: Measurement; multiplication and division

SCIENCE: Speed

SOCIAL STUDIES: Map skills

AIM: Students use multiplication and division to solve algebraic equations.

BACKGROUND: Introduce or remind students of the algebraic concept of using a letter to represent an unknown quantity. On the board, write the formula $d = (r \times t)$. Below each variable, or letter, write what the letter represents. So, d = distance, r = rate (speed), and t = time. Explain to students how to solve this equation for the variable t . Present several examples and solve them as a class. For instance, suppose distance equals 100 meters and rate equals 50 meters/minute. Then t would equal 2 minutes.

BEFORE PLAYING

Activity: Reintroduce students to maps, distances, and scales. Break students into groups. Give each group a map of the state in which you live. Choose two major cities and ask students to determine—as the crow flies—which city is closest to their hometown. Have students use the scale to determine how far each city is from their hometown. Have students suppose that two cars are traveling at 90 km/hr. How long would it take to arrive at the two destinations? Remind students to use the proper units for distance and solve the formula, $d = r \times t$, for the variable t .



AFTER PLAYING

Discussion: Review the formula $d = r \times t$. Ask students what d stands for (distance). Then ask them what the variables r and t represent (rate and time). Discuss the importance of units. If rate is measured in km/hr, in which units should distance be measured? (km) What if rate were measured in mi/hr? (Then distance should be measured in miles.)

ASSESSMENT: Assess students' answers on the After Playing Worksheet.

RESOURCES

Great Map Mysteries: 18 Stories and Maps to Build Geography and Map Skills, by Susan Julio (Scholastic Inc., 1999, \$10.95, ISBN 0-590-89641-5). Students solve mysteries by tracing routes, determining latitude and longitude, comparing time zones, and more. To order, call 1-800-SCHOLASTIC.

Quiz your students on distance, direction, and latitude and longitude.

ANSWERS

Before Playing, Worksheet: (Route #2 is shorter. Ms. Trombone likes to TRAVEL.)

After Playing, Worksheet: (Josie reaches her destination first.)

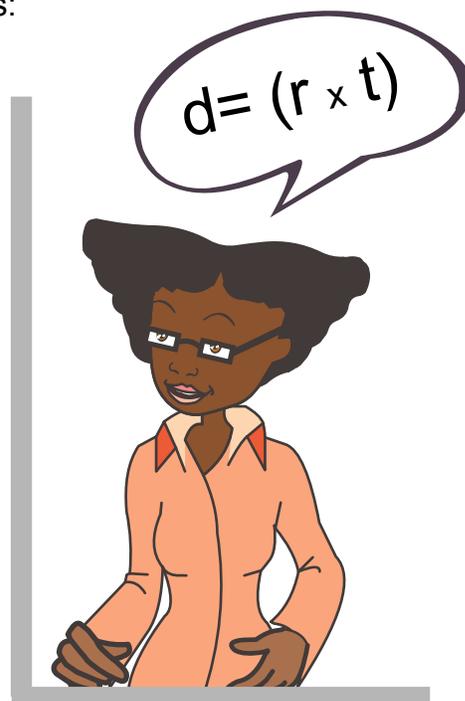
DISTANCE ACTIVITY

CONNECT TO YOUR CURRICULUM

This activity can help you meet these National Standards:

Mathematics:

- Understand various meanings of multiplication and division
- Understand the effects of multiplying and dividing whole numbers
- Identify and use relationships between operations, such as division as the inverse of multiplication, to solve problems
- Develop fluency in adding, subtracting, multiplying, and dividing whole numbers
- Represent the idea of a variable as an unknown quantity using a letter or a symbol
- Express mathematical relationships using equations
- Investigate how a change in one variable relates to a change in a second variable
- Understand such attributes as length, area, weight, volume, and size of angle and select the appropriate type of unit for measuring each attribute
- Understand the need for measuring with standard units and become familiar with standard units in the customary and metric systems
- Select and apply appropriate standard units and tools to measure length, area, volume, weight, time, temperature, and the size of angles
- Select and use benchmarks to estimate measurements



Science:

- Change, constancy, and measurement
- Abilities necessary to do scientific inquiry

Social Studies:

- People, places, and environment
- Global connections

CURRICULUM AREAS

Mathematics: measurement, multiplication and division, manipulating algebraic equations, solving algebraic equations.

Social Studies: geography, maps.

Language Arts: following directions.

Technology: computer science.

DISTANCE ACTIVITY

(Before Playing Worksheet)

Name: _____

Date: _____

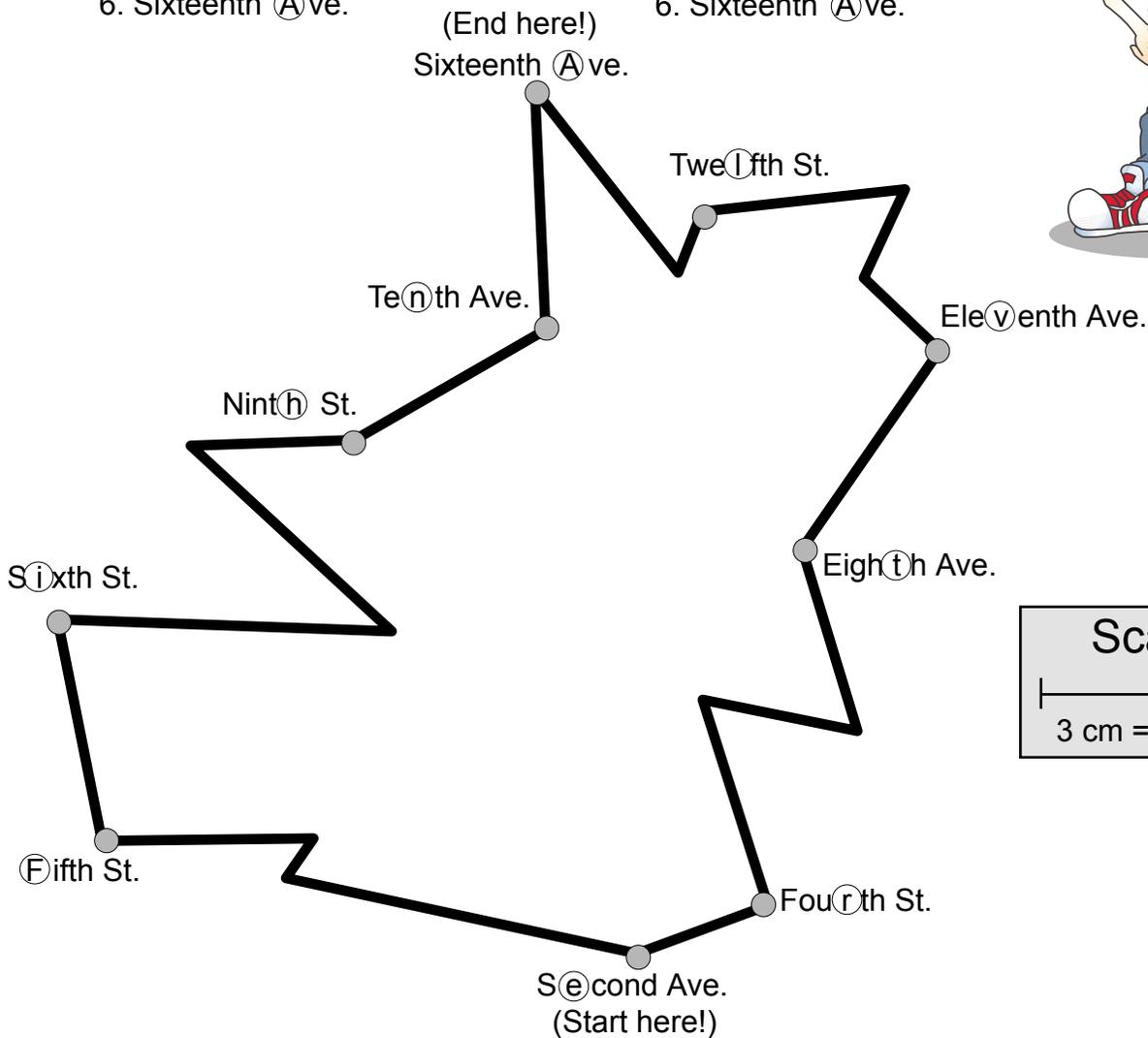
Consider the two routes below. Use the scale to determine which trip is shorter. In the correct route, the circled letters spell something. Unscramble the letters to find out what Ms. Trombone likes to do.

Route #1:

1. S[ⓔ]cond Ave.
2. F[ⓔ]ifth St.
3. S[ⓔ]ixth St.
4. N[ⓔ]inth St.
5. T[ⓔ]nth Ave.
6. Sixteenth A[ⓔ]ve.

Route #2:

1. S[ⓔ]cond Ave.
2. F[ⓔ]urth St.
3. E[ⓔ]ighth Ave.
4. E[ⓔ]venth Ave.
5. T[ⓔ]welfth St.
6. Sixteenth A[ⓔ]ve.



What does Ms. Trombone like to do? _____

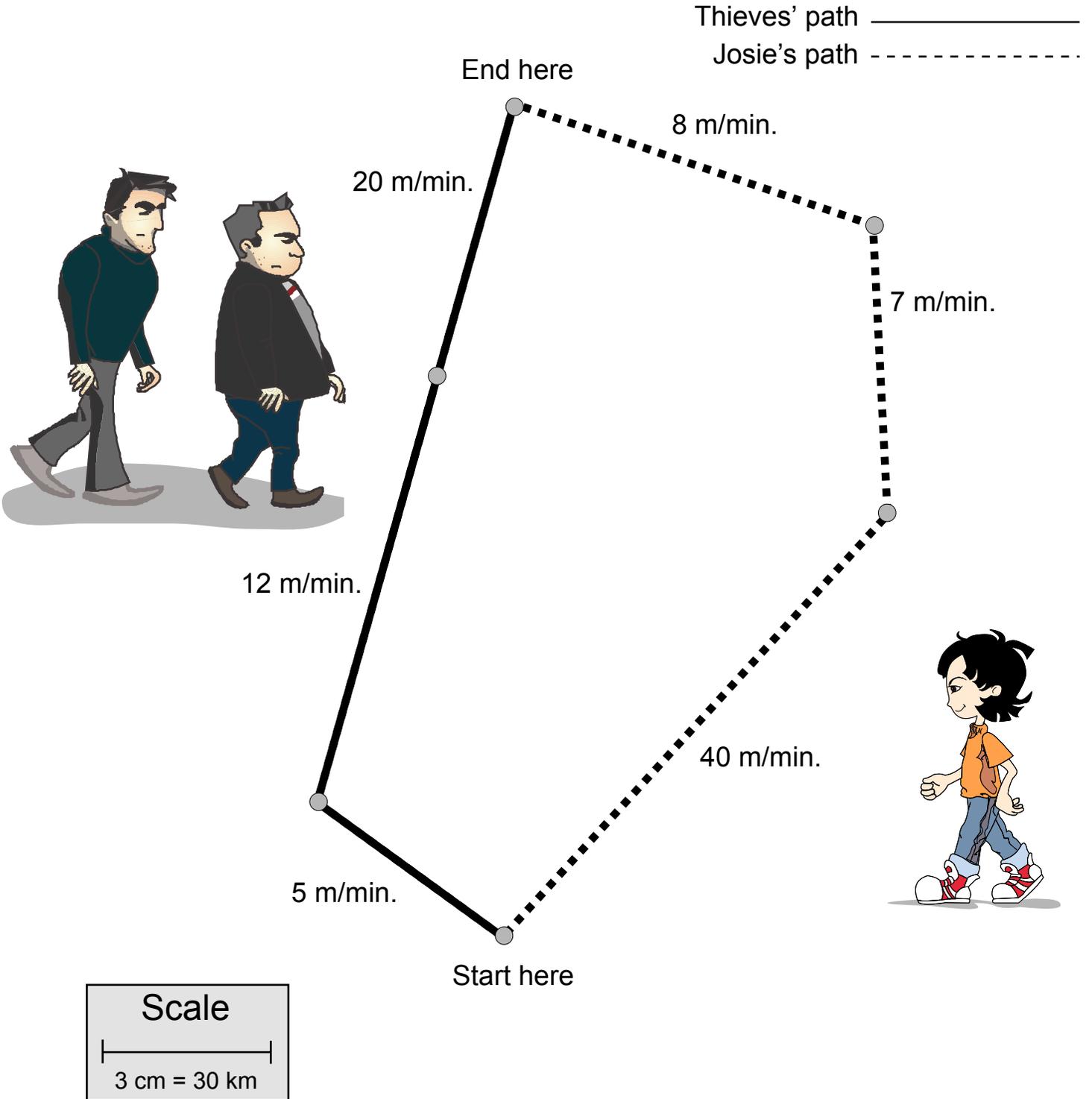
DISTANCE ACTIVITY

(After Playing Worksheet)

Name: _____

Date: _____

Determine who will reach their destination first: Josie or the thieves. Use the scale below and the formula: distance = rate x time.



SA-7.2