

Worksheet: A  
Speed-Displacement-Acceleration  
A Story of Tricycle Days



Name \_\_\_\_\_  
Date \_\_\_\_\_  
Period \_\_\_\_\_ Table \_\_\_\_\_

### Tricycle Days - An Afternoon of Riding

Julie rode her tricycle 40 meters North to Sharika's house in 80 seconds. After playing with dolls for 20 minutes, she and Sharika rode 120 meters West to Alejandro's house in 2 minutes and had lemonade and cookies. 35 minutes later the three of them rode 60 meters North to the park in 2 minutes. To their surprise, the park was closed. Kyle, Sinjin, and Austin came riding up on their tricycles and were equally disappointed that the park was closed. Sinjin suggested that they ride to Johnny's house, which was 200 meters East of the Park, and play in his large sandbox.



The six of them arrived at Johnny's house 90 seconds after they left the park, just in time to see Johnny and his 2 sisters, Miranda and Samantha, driving away in Samantha's hot-metallic-orange Mini-Copper to the Mall 0.3 kilometers South. The Mini-Cooper pulled into the Mall 3 minutes later.

Meanwhile, back at Johnny's house, Kyle, Sinjin and Austin ride off into the sunset. Julie and Sharika ride South 60 meters until they reach the school yard 100 seconds later where they see Grace, Tessa, and Megan playing hopscotch. After 30 minutes, Julie and Skarika decide that it is getting late and both go separately back to their houses.



Alejandro decides to go have dinner at Brody's house. Brody lives 40 meters East and 80 meters North of Johnny's house. It took Alejandro 160 seconds to ride to Brody's house. After a great hot dog and macaroni dinner, Brody's father takes Alejandro and his tricycle home in his red 2008 H3 Alpha Hummer. It takes the Hummer 1 minute to get to the STOP sign 140 meters South of Brody's house. They turn toward the West, pass the school yard, wave at Sharika as they drive past her house and arrive at Alejandro's house two minutes after leaving the STOP sign.

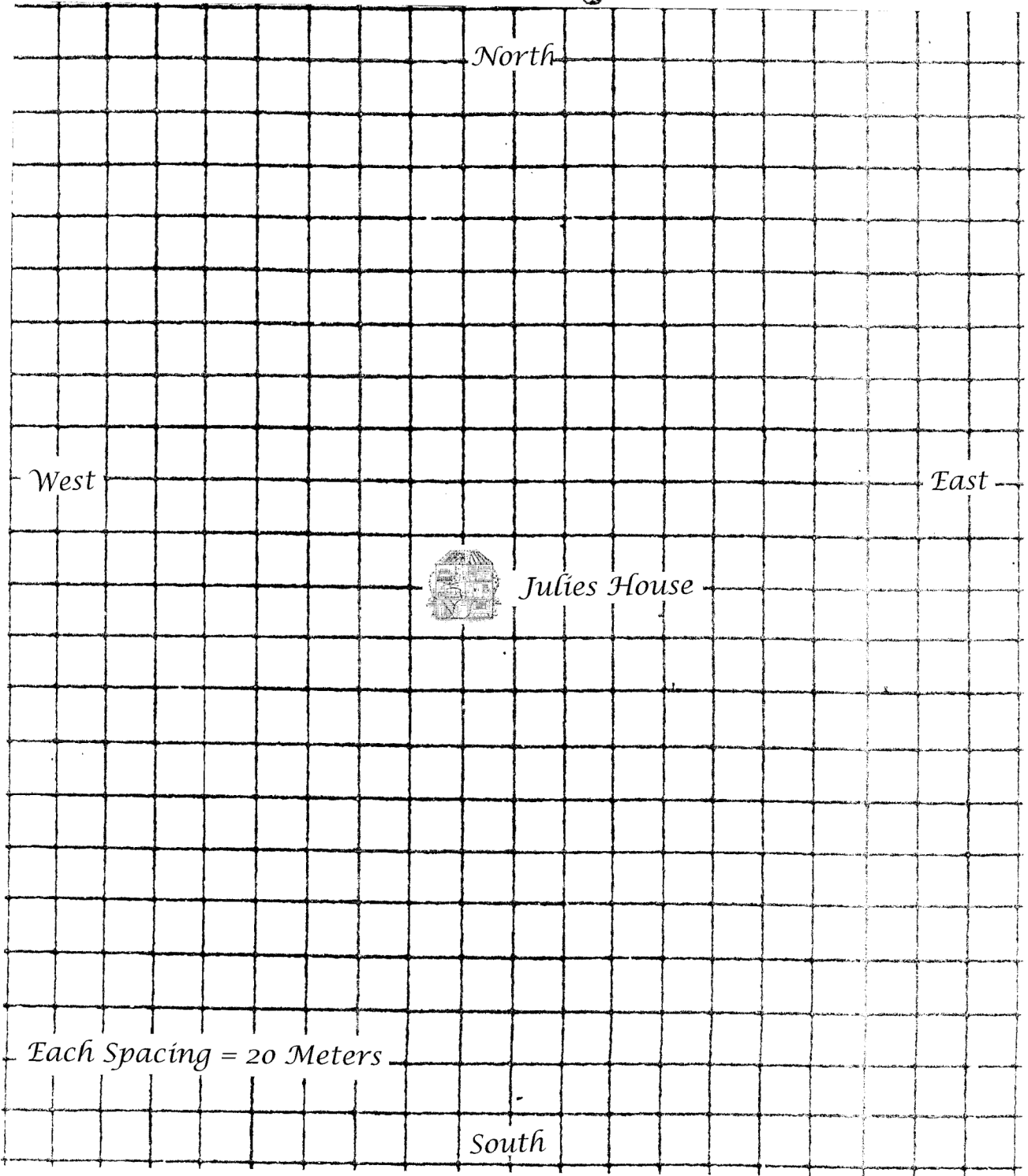


All the children smile at the wonderful day they had on their tricycles.

Graph:  
A Story of Tricycle Days



Name	_____
Date	_____
Period	_____ Table _____



Each Spacing = 20 Meters

Worksheet: Problems  
Speed-Displacement-Acceleration  
A Story of Tricycle Days



Name _____
Date _____
Period _____ Table _____

### Calculating Tricycle Days Problems

Show Your Work: 1) Write formula; 2) plug-in values; 3) correct answer with units  
Round Answers to second place past decimal.

Formulas to be used:

#### Velocity (Speed)

Velocity = Distance / Time

$$V = D/T$$

#### Average Velocity

Add total Distances divide by total times

#### Acceleration

$$\text{Acceleration} = \frac{\text{Final velocity} - \text{Initial velocity}}{\text{Time}}$$

$a = \frac{V_f - V_i}{t}$
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#### Displacement (refer to map)

Displacement (use centimeters)

Answer all the following questions:

**Show Your Work Below**

1. What was Julie's velocity (m/s) going to Sharika's house?
2. What was Sharika's velocity (m/s) going to Alejandro's house?
3. How many total meters (m) did Skarika ride her tricycle to the Park?
4. How long (in total seconds) did it take Sharika to ride her tricycle to the Park.
5. What was Sharika's Average Velocity (m/s) from her house to the Park?

Show Your Work

6. Who's house is farthest from the Mall? (follow the lines) \_\_\_\_\_

Describe How to get from this house to the Mall. \_\_\_\_\_

What is the displacement (in centimeters) from this house to the Mall?  
\_\_\_\_\_

7. How fast did Samantha drive the Mini-Copper to the Mall?

8. If the speed limit is 10 km/hr, is Samantha speeding?

9. What Was Julie's average velocity (while riding tricycle) from her house to the school yard?

What is Julie's displacement (in centimeters) from her house to the school yard?  
\_\_\_\_\_

10. 30 seconds after leaving Johnny's house, the Mini-Copper passes the school yard at a speed of 1.9 m/s. What is the **acceleration** of the hot-metallic-orange Mini Cooper as it passes the schoolyard?

**Challenge:**

11. The Hummer was going 0.8 m/s when Alejandro waved at Sharika. They arrived at Alejandro's house 40 seconds later. From the stop sign, what was the **acceleration** of the Hummer when Alejandro waved at Sharika?