

SCALE CITY



## The Road to Proportional Reasoning: Kentucky Horse Park Handouts

### TABLE OF CONTENTS

*Click on a title to go directly to the handout.*

#### **Handout 1: Measurement Origins**

Hands-on activity using proportional reasoning to compare standardized and non-standardized measurements

#### **Handout 2: Horse Height**

Problems involving standard measurement for horses and proportional reasoning

#### **Handout 3: Video Matching and Review**

An activity to use with the video “Greetings from the Kentucky Horse Park”

#### **Handout 4: “At the Track”**

An activity to accompany the “At the Track” online interactive, including data charts and graphing data, to help students understand the direct vs. inverse proportions involved in time, speed, and distance

#### **Handout 5: Practice “At the Track”**

Additional practice compiling data and creating graphs depicting the proportional relationships between speed and distance and speed and time

#### **Handout 6: Everyday Proportions**

Word problems requiring the students to apply their knowledge of the proportional relationships among speed, distance, and time to real-life situations

# HORSE PARK: HANDOUT 1

## Measurement Origins

**Name:** \_\_\_\_\_

**Date:** \_\_\_\_\_

The following chart lists measurements based on the human body that became standard measurements. Measure yourself and compare your dimensions to the standard measurement.

Type of Measurement	Legendary Origins	My Measurement	Standardized Form
Cubit (ancient measurement)	Elbow to tip of middle finger		17 to 22 inches or 43.18 to 55.88 cm
Foot	Human foot		12 inches or 30.48 cm
Hand (horse measurement)	Width of hand or height of fist		4 inches or 10.16 cm
Inch	Width of man's thumb at base of nail		1/12 of foot or 25.4 millimeters

### Standard vs. Non-standard Measurement: Feet

- Estimate the length of your classroom in standardized feet. Then use a ruler, yardstick, or measuring tape to check your estimate. Fill in the standardized length of your classroom in feet and inches in the chart below.
- Use the data in the chart above to fill in your foot's length. Based on that measurement and the length of the room in standardized feet, use proportional reasoning to determine how long the room is in your feet. Check your calculation by counting how many heel-to-toe steps it takes you to pace off the length of the room. Enter the length of the room in your feet in the chart and record the difference between the standardized and non-standardized measures.

Measurement	Standardized	Non-standardized (my foot's length in inches)	Difference between measurements
Foot	12 inches (1 foot)		
Length of classroom			

## Standard vs. Non-standard Measurement: Hands

- Estimate the height of your desk or table in hands (4-inch measurements) from the writing surface to the floor. Check your estimate using a ruler, yardstick, or measuring tape. Fill in the standardized height of your desk in hands in the chart below. Use decimals for parts of hands.
- Use the data in the first chart to fill in your own hand measurement (your fist's width). Based on that measurement and the height of your desk in standardized hands, use proportional reasoning to determine how high the desk is in your hands. Check your calculation by counting how many widths of your fist it is from the floor to the writing surface. Enter the height of the desk in your hands in the chart and record the difference in the standardized and non-standardized measures.

Measurement	Standardized	Non-standardized (my fist's length in inches)	Difference between measurements
Hand	4 inches (1 hand)		
Height of desk			

# HORSE PARK: HANDOUT 2

## Horse Height

**Name:**

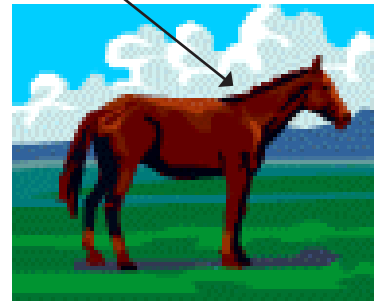
**Date:**

Horses are measured in hands. A hand is 4 inches tall, or about 10 centimeters. The highest point of the horse is called the poll. But a horse is not measured from the ground to the poll—it is measured from the ground to the withers, the midpoint of its shoulders at the highest point on its back, just in front of the saddle and behind the neck.

If a horse is 16.2 hands, it doesn't mean the horse is 16 and two-tenths hands tall. The dot is a period and the "2" means 2 inches.

So the horse is actually 16 hands, 2 inches or 66 inches high.

**withers**



1. If a horse is 70 inches tall, how many hands tall is it? (Hint: Remember, 15.1 means 15 hands and one inch, 15.2 means 15 and two inches, and 15.3 means 15 and three inches. The next measurement up is 16 hands, since one hand equals four inches.)
2. Gabe thinks his horse is 22.2 hands tall. The world's tallest horse is 84 inches tall. Could Gabe's horse really be that tall? (Hint: Remember, 22.2 means 22 hands and 2 inches.)
3. Carrie's fist is  $3\frac{1}{2}$  inches wide. Her horse is 18 of Carrie's hands high. What would you estimate that height to be in standard hands when one hand equals 4 inches? Compute the horse's exact height in hands and record both your original estimate and your computation.
4. The world's smallest horse, Thumbelina, is  $17\frac{1}{2}$  inches tall or 4.375 hands tall (using decimals). As hands are measured, Thumbelina's height would be between 4.1 and 4.2 hands. One hand is 10.16 centimeters. How tall is Thumbelina in centimeters?
5. At the district horse show, the height limit for the pony class is 14.2 hands (that is, 14 hands, 2 inches). Taller horses are in the horse class. Charlotte's horse is 59 inches tall. Will she be in the pony or horse class?
6. The world's smallest horse is  $17\frac{1}{2}$  inches tall. The world's tallest horse is 7 feet high. What is the ratio of the heights of the tallest to the smallest?
7. Eleven of Kelli's walking strides equal 1 running stride for Man o' War. If it takes Kelli 500 walking strides to go a quarter of a mile, how many running strides would Man o' War take to travel a quarter of a mile? Round to the nearest stride.

# KEY: HORSE PARK: HANDOUT 2

## Horse Height

**1.** If a horse is 70 inches tall, how many hands tall is it? (Hint: Remember, 15.1 means 15 hands and one inch, 15.2 means 15 and two inches, and 15.3 means 15 and three inches. The next measurement up is 16 hands, since one hand equals four inches.)

*$70 \div 4 = 17$  and 2 inches. The horse is 17.2 hands.*

**2.** Gabe thinks his horse is 22.2 hands tall. The world's tallest horse is 84 inches tall. Could Gabe's horse really be that tall? (Hint: Remember, 22.2 means 22 hands and 2 inches.)

*No, 22.2 hands is 90 inches or 7 1/2 feet tall. The world's tallest horse is 21 hands tall or 7 feet. ( $22 \times 4 = 88$  plus 2 inches = 90;  $84 \div 4 = 21$  hands)*

**3.** Carrie's fist is 3 1/2 inches wide. Her horse is 18 of Carrie's hands high. What would you estimate that height to be in standard hands when one hand equals 4 inches? Compute the horse's exact height in hands and record both your original estimate and your computation.

*Since Carrie's hand is seven-eighths of a standard hand, the height of her horse in standard hands would be seven-eighths of 18. Students might estimate that that would be between 15 and 16 hands. Computation shows that Carrie's horse is 15.3 hands tall. ( $3.5 \times 18 = 63$  inches;  $63 \div 4 = 15$  hands and three inches.)*

**4.** The world's smallest horse, Thumbelina, is 17 1/2 inches tall or 4.375 hands tall (using decimals). As hands are measured, Thumbelina's height would be between 4.1 and 4.2 hands. One hand is 10.16 centimeters. How tall is Thumbelina in centimeters?

*Thumbelina is 44.45 centimeters. ( $4.375 \times 10.16 = 44.45$ )*

**5.** At the district horse show, the height limit for the pony class is 14.2 hands (that is, 14 hands, 2 inches). Taller horses are in the horse class. Charlotte's horse is 59 inches tall. Will she be in the pony or horse class?

*She'll be in the horse class. Fifty-nine inches is greater than the 58-inch limit ( $14.2 = 14$  hands 2 inches or  $14 \times 4 = 56 + 2$  inches = 58 inches).*

**6.** The world's smallest horse is 17 1/2 inches tall. The world's tallest horse is 7 feet high. What is the ratio of the heights of the tallest to the smallest?

*$7 \times 12/17.5 = 84/17.5$  or 4.8 to 1 or 4.8:1 (There are many other ways this ratio could be expressed.)*

**7.** Eleven of Kelli's walking strides equal 1 running stride for Man o' War. If it takes Kelli 500 walking strides to go a quarter of a mile, how many running strides would Man o' War take to travel a quarter of a mile? Round to the nearest stride.

*45 strides ( $500 \div 11 = 45.4545$ )*

# HORSE PARK: HANDOUT 3

## Video Matching and Review

**Name:** \_\_\_\_\_

**Date:** \_\_\_\_\_

Pay attention to the video “Greetings from the Kentucky Horse Park,” so you can correctly match the word to the definition.

\_\_\_\_\_ **1.** Albion

\_\_\_\_\_ **2.** hand

\_\_\_\_\_ **3.** withers

\_\_\_\_\_ **4.** American Quarter Horse

\_\_\_\_\_ **5.** Man o’ War

\_\_\_\_\_ **6.** 28 feet

\_\_\_\_\_ **7.** Arabian horse

\_\_\_\_\_ **8.** Seabiscuit

**A.** Weighs about 900 pounds

**B.** The measurement of horses

**C.** Won 95 percent of races

**D.** Can run as fast as a car, 55 mph

**E.** Man o’ War’s grandson

**F.** Weighs two thousand pounds

**G.** Seven times greater than Kelli’s running stride

**H.** The highest point of a horse’s shoulder

My favorite horse on the video was \_\_\_\_\_ because

# KEY: HORSE PARK: HANDOUT 3

## Video Matching and Review

1. F, 2. B, 3. H, 4. D, 5. C, 6. G, 7. A, 8. E

### Excerpts from “Greetings from the Kentucky Horse Park” script:

“This one—named *ALBION*—weighs 2,000 pounds and is about 17 hands high.”

“One hand equals approximately four inches. And a horse is measured from his *WITHERS*, the highest point of his shoulder.”

“This graceful Arabian still *WEIGHS ABOUT 900 POUNDS*.”

“*AMERICAN QUARTER HORSES* excel at sprinting short distances. Some have been clocked at fifty-five miles per hour—as fast as a car!”

“*MAN O’ WAR* won twenty of twenty-one races.”

“His gait or stride was an incredible 28 *FEET*.”

“It takes Kelli *ELEVEN* walking strides to equal Man o’ War’s one. And if she’s running...she still can’t compete. Even at a gallop, she needs *SEVEN* strides to travel those twenty-eight feet.”

“*SEABISCUIT* was Man o’ War’s grandson.”

# HORSE PARK: HANDOUT 4

## “At the Track”

**Name:**

**Date:**

Complete the chart of distance and time as you race the runners in the “At the Track” interactive. Calculate the speed from information in either column one or column two. Remember that speed is equal to distance divided by time.

Runner	Distance for 60 sec. (miles)	Time for 1 mile (seconds)	Speed (mph)
1. Man o’ War			
2. Seabiscuit			
3. Secretariat			
4. Cheetah			
5. Lily			
6. Roger Bannister			

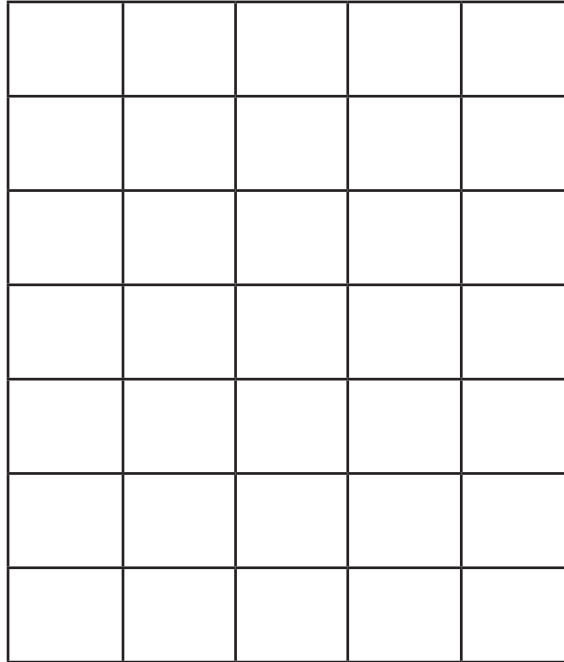
Sort the runners by rate, from slowest to fastest.

Runner	Distance for 60 sec. (miles)	Time for 1 mile (seconds)	Speed (mph)

1. As the speed of the runner increases, what happens to the distance the runner travels in a set amount of time?

2. Is this a direct proportion or an inverse proportion? How do you know?

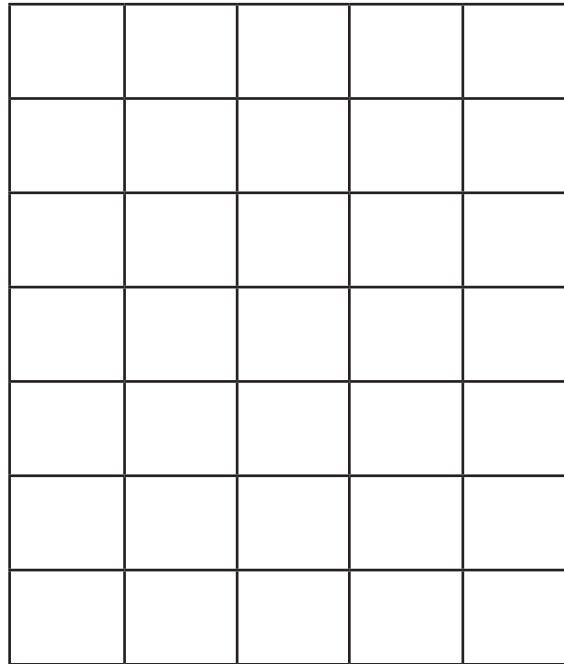
3. Use the data from the chart to sketch the graph of distance vs. speed for Lily, Roger Bannister, Man o’ War, and the cheetah (Man o’ War’s speed is so close to that of Seabiscuit and Secretariat that it would be difficult to plot the horses separately on this scale.) Plot the speed on the  $x$ -axis and the distance on the  $y$ -axis.



4. As the speed of the runner increases, what happens to the time the runner takes to travel a set distance?

5. Is this a direct or an inverse proportion? How do you know?

6. Use the data to sketch the graph of time vs. speed for Lily, Roger Bannister, Man o’ War, and the cheetah. Put time on the y-axis and speed on the x-axis.



7. Describe how the appearance of the graphs of distance vs. speed and time vs. speed differ. How do you know whether the graph shows a direct or an inverse proportion?

# KEY: HORSE PARK: HANDOUT 4

## “At the Track”

Complete the chart of distance and time as you race the runners. Calculate the speed from information in either column one or column two. Remember that speed is equal to distance divided by time.

Runner	Distance for 60 sec. (miles)	Time for 1 mile (seconds)	Speed (mph)
1. Man o' War	0.619	97	37.1
2. Seabiscuit	0.588	102	35.3
3. Secretariat	0.632	95	37.9
4. Cheetah	1	60	60
5. Lily	0.125	480	7.5
6. Roger Bannister	0.250	240	15

Sort the runners by rate, from slowest to fastest

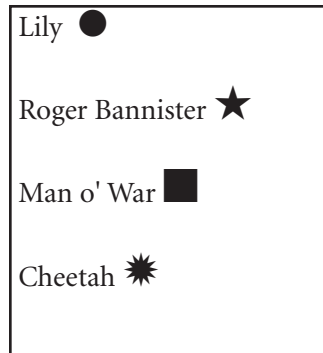
Runner	Distance for 60 sec. (miles)	Time for 1 mile (seconds)	Speed (mph)
5. Lily	0.125	480	7.5
6. Roger Bannister	0.250	240	15
2. Seabiscuit	0.588	102	35.3
1. Man o' War	0.619	97	37.1
3. Secretaria	0.632	95	37.9
4. Cheetah	1	60	60

1. As the speed of the runner increases, what happens to the distance the runner travels in a set amount of time?  
*It increases.*

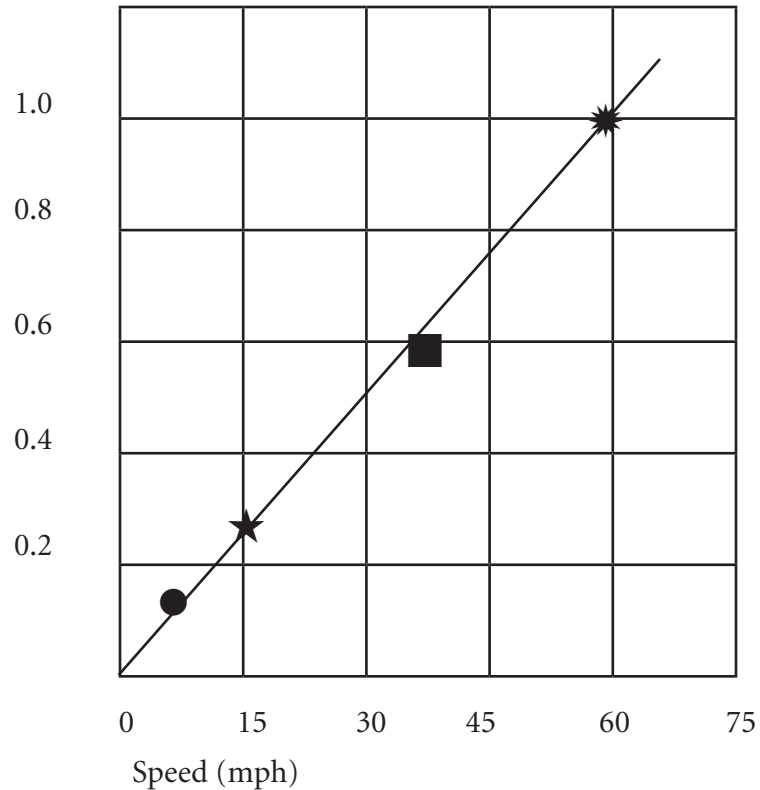
2. Is this a direct proportion or an inverse proportion? How do you know?

*This is a direct proportion. When the speed increases, the distance traveled in a set amount of time increases, too. Students may observe that Lily's speed is half of Roger Bannister's and her distance is also half of Roger Bannister's. The cheetah runs four times as fast as Roger Bannister, and he goes four times as far.*

3. Use the data from the chart to sketch the graph of distance vs. speed for Lily, Roger Bannister, Man o' War, and the cheetah (Man o' War's speed is so close to that of Seabiscuit and Secretariat that it would be difficult to plot the horses separately on this scale.) Plot the speed on the  $x$ -axis and the distance on the  $y$ -axis.



Distance  
(miles)



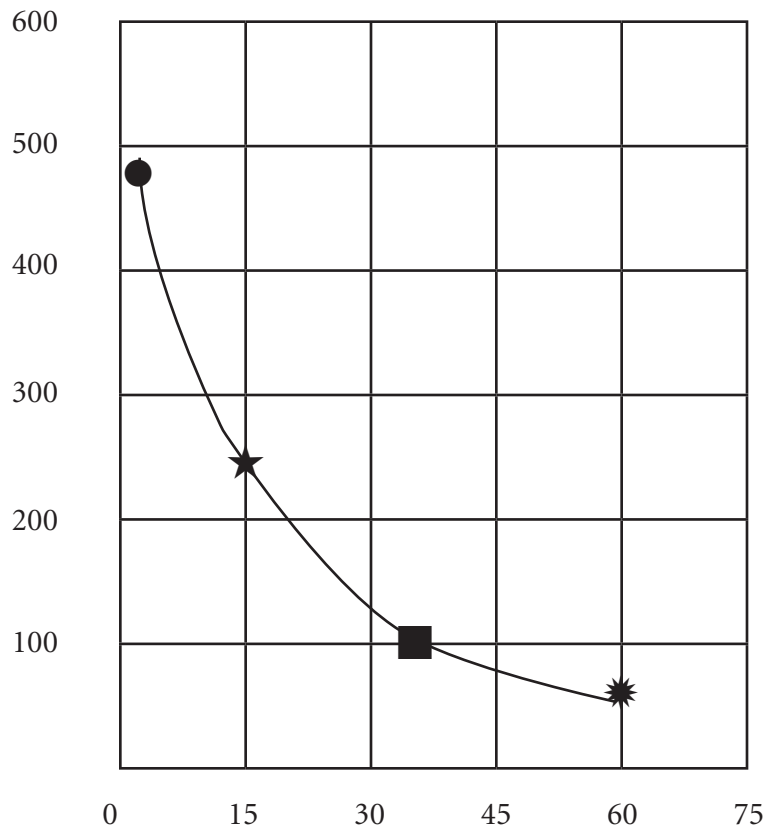
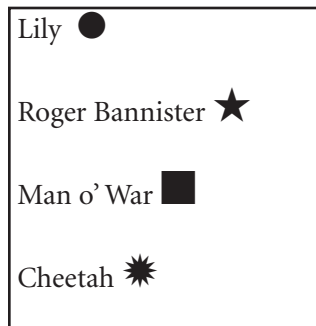
**Note to Teacher:**

*This handout only requires students to sketch the graph. Their sketch should be of a straight line connecting the four dots something like the example above, with an indication that they considered how each of the speeds and distances relate to one another spatially. If you want, you could have them create a more elaborate and properly labeled graph on graph paper that would reflect more exacting decisions about scale and how to subdivide the  $x$  and  $y$  axes.*

4. As the speed of the runner increases, what happens to the time the runner takes to travel a set distance?  
*The time decreases.*

5. Is this a direct or an inverse proportion? How do you know?  
*This is an inverse proportion. As the speed increases, the time it takes to travel the same distance decreases.*

6. Use the data to sketch the graph of time vs. speed for Lily, Roger Bannister, Man o' War, and the cheetah. Put time on the y-axis and speed on the x-axis.



**Teacher Tip:**

*This handout only requires students to sketch the graph. Their sketch should be of a curved line connecting the four dots something like the example above, with an indication that they considered how each of the speeds and times relate to one another spatially. If you want, you could have them create a more elaborate and properly labeled graph on graph paper that would reflect more exacting decisions about scale and how to subdivide the x and y axes.*

7. Describe how the appearance of the graphs of distance vs. speed and time vs. speed differ. How do you know whether the graph shows a direct or an inverse proportion?

*The x and y value in Distance vs. Speed both increase steadily relative to one another, indicating that they are directly proportional. They form a straight line originating in 0. The graph of Time vs. Speed is a smooth L-shaped curve in which the x-value increases as the y value decreases. This indicates that the two values are indirectly proportional.*

# HORSE PARK: HANDOUT 5

## Practice "At the Track"

**Name:**

**Date:**

Here are speeds of various modes of transportation. Calculate the time it would take to travel 60 miles. Express your answers in fractions.

**Modes of Transportation**

<b>Mode of Transportation</b>	<b>Speed (mph)</b>	<b>Time (hours)</b>	<b>Distance (miles)</b>
Commuter plane	240 mph		60
High speed train	120 mph		60
Car	60 mph		60
Motor bike	45 mph		60
Electric bike	15 mph		60
Personal transporter	10 mph		60
Kick scooter	6 mph		60

1. What happens to time as speed increases?
2. The speed of the electric bike is  $\frac{1}{4}$  the speed of the car. What is the ratio of the electric bike's travel time to the car's travel time?
3. The speed of the personal transporter is  $\frac{1}{6}$  the speed of the car. What is the ratio of the personal transporter's time to the car's time?
4. Speed times time equals distance. How does this formula indicate that speed and time are inversely proportional to each other?

## Practice “At the Track”

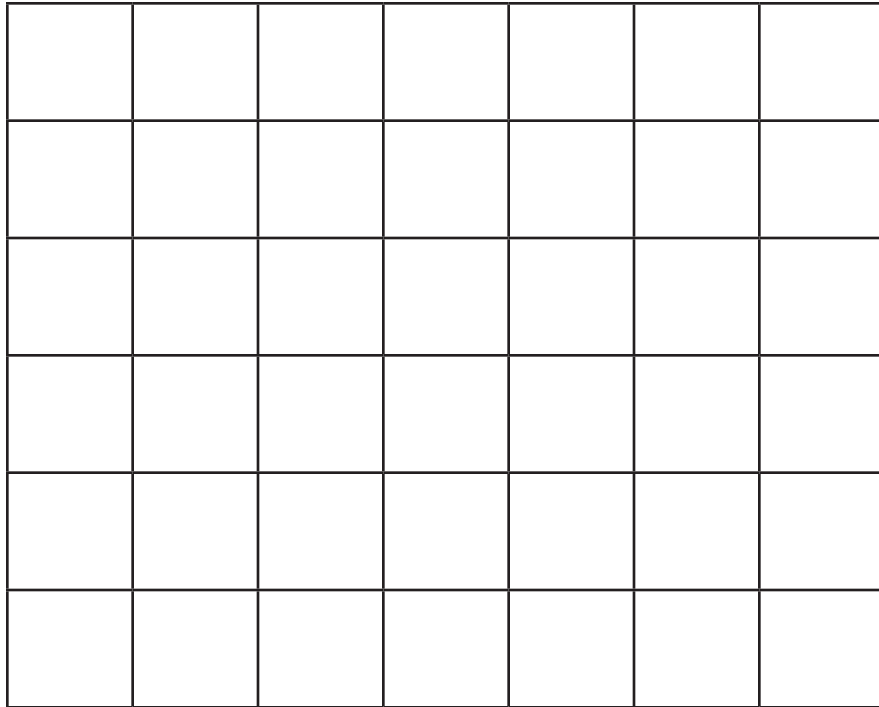
5. Sketch a graph of the data from “Modes of Transportation” with speed on the  $x$ -axis and time on the  $y$ -axis.


6. A local organization is raising money for a skate park. Participants accept pledges based on the number of laps they run around the track between 10:00 and 11:00 on Saturday. Four times around the track is one mile.

Runner	Number of Laps	Total Miles	Speed (mph)
Fred	32 laps		
Roderick	30 laps		
Samuel	28 laps		
Kelly	24 laps		
Will	20 laps		
Jacob	16 laps		
Moses	8 laps		
Job	4 laps		
<b>Totals</b>	162 laps		

## Practice “At the Track”

7. Sketch a graph of the data from the chart of skate park fundraisers with speed on the  $x$ -axis and distance on the  $y$ -axis.



8. How do you know that speed and distance are in direct proportion?

# KEY: HORSE PARK: HANDOUT 5

## Practice “At the Track”

Here are speeds of various modes of transportation. Calculate the time it would take to travel 60 miles. Express your answers in fractions.

### Modes of Transportation

Mode of Transportation	Speed (mph)	Time (hours)	Distance (miles)
Commuter plane	240 mph	$1/4$ hour	60
High speed train	120 mph	$1/2$ hour	60
Car	60 mph	1 hour	60
Motor bike	45 mph	$1 \frac{1}{3}$ hours	60
Electric bike	15 mph	4 hours	60
Personal transporter	10 mph	6 hours	60
Kick scooter	6 mph	10 hours	60

**1.** What happens to time as speed increases?

*Time decreases as speed increases. They are inversely proportional.*

**2.** The speed of the electric bike is  $1/4$  the speed of the car. What is the ratio of the electric bike’s travel time to the car’s travel time?

*4:1*

**3.** The speed of the personal transporter is  $1/6$  the speed of the car. What is the ratio of the personal transporter’s time to the car’s time?

*6:1*

**4.** Speed times time equals distance. How does this formula indicate that speed and time are inversely proportional to each other?

*If speed =  $x$  and time =  $y$ ,  $x \cdot y$  will equal a constant, which is the distance traveled. This formula is how inverse proportions are expressed ( $x \cdot y = k$ ). Speed and time are related variables. As speed increases, the travel time decreases. The higher your speed, the shorter the time it takes you to travel a set distance.*

**5.** Sketch a graph of the data from “Modes of Transportation” with speed on the  $x$ -axis and time on the  $y$ -axis.

*The  $x$ -axis should be labeled “Speed (mph).” The  $y$ -axis should be labeled “Time (hours).” As the  $x$  value increases, the  $y$  value decreases. As the  $y$  value increases, the  $x$  value becomes small. The graph looks like a capital letter L with a smooth curve connecting the points and no point crossing the  $x$  or  $y$ -axis.*

*If you want, you could have students create a more elaborate and properly labeled graph on graph paper that would reflect more exacting decisions about scale and how to subdivide the  $x$  and  $y$  axes.*

## KEY: Practice “At the Track”

6. A local organization is raising money for a skate park. Participants accept pledges based on the number of laps they run around the track between 10:00 and 11:00 on Saturday. Four times around the track is one mile.

Runner	Number of Laps	Total Miles	Speed (mph)
Fred	32 laps	8 miles	8 mph
Roderick	30 laps	7.5 miles	7.5 mph
Samuel	28 laps	7 miles	7 mph
Kelly	24 laps	6 miles	6 mph
Will	20 laps	5 miles	5 mph
Jacob	16 laps	4 miles	4 mph
Moses	8 laps	2 miles	2 mph
Job	4 laps	1 mile	1 mph
<b>Totals</b>	162 laps	30.5 miles	

7. Draw a simple graph that illustrates the relationship between distance and speed. Use laps and speed. The graph should show speed (mph) on the x-axis and distance (miles) on the y-axis. As x increases, y increases steadily to create a straight line going up at an angle from 0 degrees.

**Teacher Tip:**

If you want, you could have students create a more elaborate and properly labeled graph on graph paper that would reflect more exacting decisions about scale and how to subdivide the x and y axes.

8. How do you know that speed and distance are a direct proportion?

$$\text{Speed} = \text{distance}/\text{time}$$

$$\text{Speed} \times \text{time} = \text{distance}$$

$$\text{Distance}/\text{speed} = \text{time}$$

The distance and the speed both increase proportionally. The faster you go, the farther you will go in a set period of time.

Direct proportions are expressed as  $x/y = k$ .

# HORSE PARK: HANDOUT 6

## Everyday Proportions

**Name:**

**Date:**

1. Chelsea finished the 5K race in 30 minutes. There are 3.1 miles in a 5 kilometer race. What is her speed in mph?
2. Henry's family is traveling 600 miles on vacation. There are four drivers in his family, and each will drive 150 miles of the 600-mile journey. Express your answer in decimals, rounded to the nearest hundredth place.

Driver	Average Speed (mph)	Distance (miles)	Time (hours)
Father	70	150	
Mother	65	150	
Older sister	60	150	
Grandpa	55	150	

- A. Based on the information given, determine how long it will take the family to travel 600 miles.
  - B. Looking at the relationship of speed and time, what indicates there is an inverse proportion?
3. A trucking company requires its drivers to average 65 mph on the highway. If a trucker drives for 5 hours, what would be the total distance he travels?
  4. The school bus travels the 40-mph speed limit on the curvy road to the wildlife reserve. A tractor in front of the bus travels at 8 mph. If the tractor is only on the road for 2 miles, how many minutes will the tractor be on the road?
  5. Carson, who is in elementary school, walks  $\frac{1}{3}$  as fast as his teenage brother runs. His teenage brother finishes the 2-mile run/walk in 12 minutes. Carson is walking the same 2-mile run/walk. What will Carson's time be?

## Everyday Proportions

6. During a 20-minute period, gym students ran the following distances. Calculate their speeds using decimals.

Name	Distance (miles)	Time (minutes)	Speed (mph)
Carl	2.4 miles	20	
Bob	2.6 miles	20	
Carter	3.2 miles	20	

Is this relationship between speed and distance an inverse or direct proportion?

7. Gym students ran two miles in the following times. Calculate their speeds using fractions.

Name	Distance (miles)	Time (minutes)	Speed (mph)
Haley	2 miles	16 minutes	
Gotti	2 miles	18 minutes	
Emma	2 miles	20 minutes	

What is the relationship between speed and time called?

# KEY: HORSE PARK: HANDOUT 6

## Everyday Proportions

1. Chelsea finished the 5K race in 30 minutes. There are 3.1 miles in a 5 kilometer race. What is her speed in mph?  
*6.2 mph*

2. Henry's family is traveling 600 miles on vacation. There are four drivers in his family, and each will drive 150 miles of the 600-mile journey. Express your answer in decimals, rounded to the nearest hundredth place.

Driver	Average Speed (mph)	Distance (miles)	Time (hours)
Father	70	150	<i>2.14 hours</i>
Mother	65	150	<i>2.31 hours</i>
Older sister	60	150	<i>2.5 hours</i>
Grandpa	55	150	<i>2.73 hours</i>

A. Based on the information given, determine how long it will take the family to travel 600 miles.  
*9.68 hours*

B. Looking at the relationship of speed and time, what indicates there is an inverse proportion?  
*Speed times time always equals the constant distance of 150 miles. As speed decreases, the amount of time increases proportionally.*

3. A trucking company requires its drivers to average 65 mph on the highway. If a trucker drives for 5 hours, what would be the total distance he travels?  
*325 miles*

4. The school bus travels the 40-mph speed limit on the curvy road to the wildlife reserve. A tractor in front of the bus travels at 8 mph. If the tractor is only on the road for 2 miles, how many minutes will the tractor be on the road?  
 *$2/8 = 1/4$ —the part of an hour the tractor will be on the road.  $1/4$  of 60 minutes = 15  
15 minutes*

5. Carson, who is in elementary school, walks  $1/3$  as fast as his teenage brother runs. His teenage brother finishes the 2-mile run/walk in 12 minutes. Carson is walking the same 2-mile run/walk. What will Carson's time be?  
*36 minutes*

6. During a 20-minute period, gym students ran the following distances. Calculate their speeds using decimals.

Name	Distance (miles)	Time (minutes)	Speed (mph)
Carl	2.4 miles	20	<i>7.2</i>
Bob	2.6 miles	20	<i>7.8</i>
Carter	3.2 miles	20	<i>9.6</i>

Is this relationship between speed and distance an inverse or direct proportion?  
*A direct proportion*

## KEY: Everyday Proportions

7. Gym students ran two miles in the following times. Calculate their speeds using fractions.

Name	Distance (miles)	Time (minutes)	Speed (mph)
Haley	2 miles	16 minutes	$7 \frac{1}{2}$
Gotti	2 miles	18 minutes	$6 \frac{2}{3}$
Emma	2 miles	20 minutes	6

What is the relationship between speed and time called?

*An inverse proportion*