

Name \_\_\_\_\_ Date \_\_\_\_\_

## Math Activity Sheet: *Forces and Motion*

Show your work and write your answers on notebook paper.

1. Remember, weight is a measurement of the force of gravity. We learned that the force of gravity is less on the moon than it is on earth. If your weight is 86.5 pounds on earth, and 14.27 pounds on the moon, how much more do you weigh on earth than on the moon?

► **Challenge Question:**

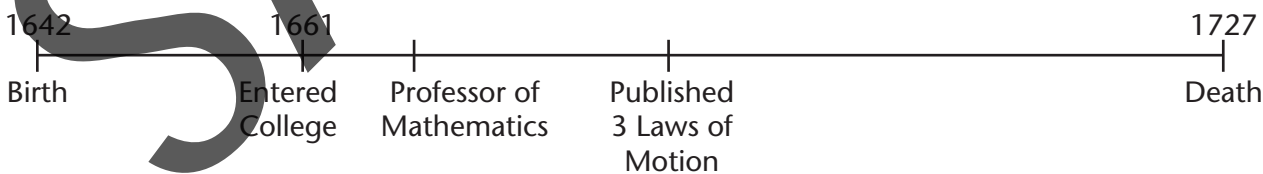
How much more is your mass on earth than it is on the moon?

2. Speed is a measure of how quickly an object's position changes. We learned that speed equals distance divided by time. A car is traveling from San Francisco to Los Angeles. The drive takes 6 hours to travel 378 miles. How fast is the car traveling?  
Speed = Distance ÷ Time

► **Challenge Question:**

If the car travels back at 58 miles per hour, how long will the trip take?  
Round your answer to the nearest half hour.

3. Sir Isaac Newton was a remarkable English Mathematician and Physicist. He became a professor in 1669 and later published his theories on the Three Laws of Motion in 1687. Complete the timeline of Newton's life to answer the following questions.



- a. How long did Newton live?
- b. At what age did Newton become a professor?
- c. How many years before his death did he write about the Three Laws of Motion?

► **Challenge Question:**

Find out more about Galileo Galilei (1564–1642) and make a timeline of the important events in his life.

## Average Speed Chart

4. The following chart is taken from page 15 of the Delta Science Content Reader Forces and Motion. The chart shows the average speeds of several animals and objects. Use the chart to answer the questions.

Animal or Object	Speed (metric)	Speed (customary)
Snail	0.045 km/hr	0.028 mi/hr
Sloth	0.13 km/hr	0.08 mi/hr
Galapagos Tortoise	0.3 km/hr	0.19 mi/hr
Sphinx Moth	53 km/hr	33 mi/hr
Cheetah, running	100 km/hr	62 mi/hr
Fastest Baseball Pitch	168.7 km/hr	104.8 mi/hr
Peregrine Falcon, diving	320 km/hr	198 mi/hr
Jet, average cruising speed	920 km/hr	572 mi/hr
International Space Station	28,000 km/hr	17,000 mi/hr

km = kilometers      mi = miles

- How many kilometers per hour faster is the International Space Station traveling than a jet cruising at average speed?
- If a sloth travels for 2 hours at average speed, how many miles will the sloth have traveled?
- If you could throw a baseball at half the speed of the fastest baseball pitch, how fast would you throw the ball in km/hr?
- Which is the fastest animal on the list? Which is the slowest? Find the difference between the average miles per hour of the fastest and slowest animal on the list.