NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CLASS: \_\_\_\_\_\_\_\_

**Anticipatory Set:**

You are shipping a container with about 30,000 tennis shoes from Hong Kong to Long Beach. When are your shoes going to arrive in Long Beach?

As long as you know distance and rate of speed for the ship, you can figure out when the shoes are expected to arrive.

**PRACTICE PROBLEMS:**

**OBJECTIVE:**

Students will learn how to apply the distance formula to find distance traveled, time traveled, or rate (speed) in various transportation scenarios.

**KEYWORDS:**

**Distance** - miles, kilometers, inches, feet, meters …

**Rate** – speed - mph, kmph, feet per second, meters per minute, knot

**Time** - minutes, hours, days, seconds, years, weeks

**Nautical mile** - about 1.15 miles or 1.852 km

**Knot** – 1 nautical mile per hour

**FORMULA:**

D = R x T

Distance = Rate x Time

**MODELING:**

If you are traveling for 3 hours at 65 mph, how far will you have gone?

1. Write down formula. d = r x t

2. What are you trying to find AND what do you know?

 D= ?? r = 65 mph t = 3 hours

3. Substitute known variables and solve.

 d = 3 hours x 65 mph

 d = 195 miles

ACTIVITY: DISTANCE, RATE AND TIME

1. The Glory Sanye, a cargo ship, is traveling from Long Beach to Quigdoa Port in China’s Jiaozhou Gulf. If it travels for approximately 15 days at a rate of 480 miles per day, how far is the Gloria Sanye traveling?

2. Now, the Glory Sanye is traveling from the Quigdoa Port to Dubai in the United Arab Emirates. Now empty, it travels 520 miles per day for 7 days. How far is Quigdoa Port from Dubai?

3. The MSC Texas, a cargo ship, is traveling from Hong Kong to Long Beach. It is full of containers, about 8,200 TEUs (1 TEU = Twenty-Foot Equivalent Unit, or a 20-foot-long container). MSC Texas will take about 600 hours (about 25 days) to travel 13,200 nautical miles. How fast is the MSC Texas traveling?

4. The MSC Texas is traveling back to Hong Kong but only a third of the containers are full. It will take the MSC Texas about 15 days to travel 12,500 nautical miles to Hong Kong. How fast is the MSC Texas traveling on the return trip?

5. You are traveling to Sacramento, CA from Los Angeles, about 375 miles by train. If the train travels an average speed of 30 mph, how long will it take to reach Sacramento?

6. The new speed trains that the State of California is looking to buy can travel 100 mph. How long would the trip from Los Angeles to Sacramento, about 375 miles, take in the new trains?

7. You are shipping a 40-foot container full of athletic shoes, about 30,000 shoes, to Long Beach from Shanghai China, approximately 11,500 nautical miles. The Hyundai Independence cargo ship can travel 23 nm/hour, or 23 knots. How many hours will it take to get the shoes to Long Beach?

8. A car carrier is traveling 442 miles from Tokyo to the Port of Long Beach with new Toyotas. The ship will travel at a rate of 22 knots. How long will it take for the ship to reach the Port?

9. The new Toyota cars will be sent to New York by train, about 2,850 miles. The train will travel an average speed of 50 miles per hour. How long will it take to reach New York?

10. An electronics store is shipping new LCD televisions from Taiwan to Long Beach, about 11,040 nautical miles. The MSC Texas cargo ship can make the trip from Taiwan to Long Beach in 460 hours, about 19 days. How fast will the MSC Texas be traveling?