NOVEMBER STEM CHALLENGE

Pilgrim Passage

CHALLENGE: Design and construct a “Mini Mayflower” to transport at least 25 passengers across the Atlantic Ocean.

CONSTRAINTS:

- Boat must hold at least 25 passengers (pennies)
- Boat must move the length of your bathtub as quickly as possible, without any passengers going overboard or getting wet
- Each boat can only be made of THREE materials. Tape is a material.

MATERIALS TO CHOOSE FROM: (you only get THREE)

- Jumbo craft sticks
- Rubber bands
- Straws
- Masking Tape
- Cardstock/cardboard
- Plastic wrap
- Glue
- Foil
- Foam bowl

DESIGN:

- Draw a labeled schematic (blueprint or outline) of your design
- Decide what materials you need and how much of each item. You only get three different kinds of items.

BUILD, TEST, ANALYZE:

- Did it work how you expected?
- What changes could you make to improve the Pilgrim transport?
- Was the material suitable for water? Was the shape good for buoyancy? If your passengers got wet, what changes would keep them dry?

Tips for Teachers:

- ★ Substitute allowable materials to your convenience
- ★ Have students work in small teams to improve communication and collaboration skills
- ★ Adjust required float distance to your convenience
- ★ Pennies could be substituted for marbles, buttons, etc. Any small manipulative you have.

Student Challenge Worksheet

Design Challenge: Design and construct a “Mini Mayflower” to transport at least 25 passengers across the Atlantic Ocean.

Draw the design in the space below and label the materials.

Build: Build your design based on your plan.

Test:

Measure and record the distance your pumpkin travels.

Pilgrim Passage Data Table	**Trial**			
	1	**2**	**3**	**4**
Did passengers stay dry for full trip?				
Changes needed				

Analyze:

Which float trial went the fastest and kept the passengers driest? WHY did it work so well?