

VALENTINE'S DAY

Color by Sum

10 = Red

8 = Green

13 = Orange

6 = Pink

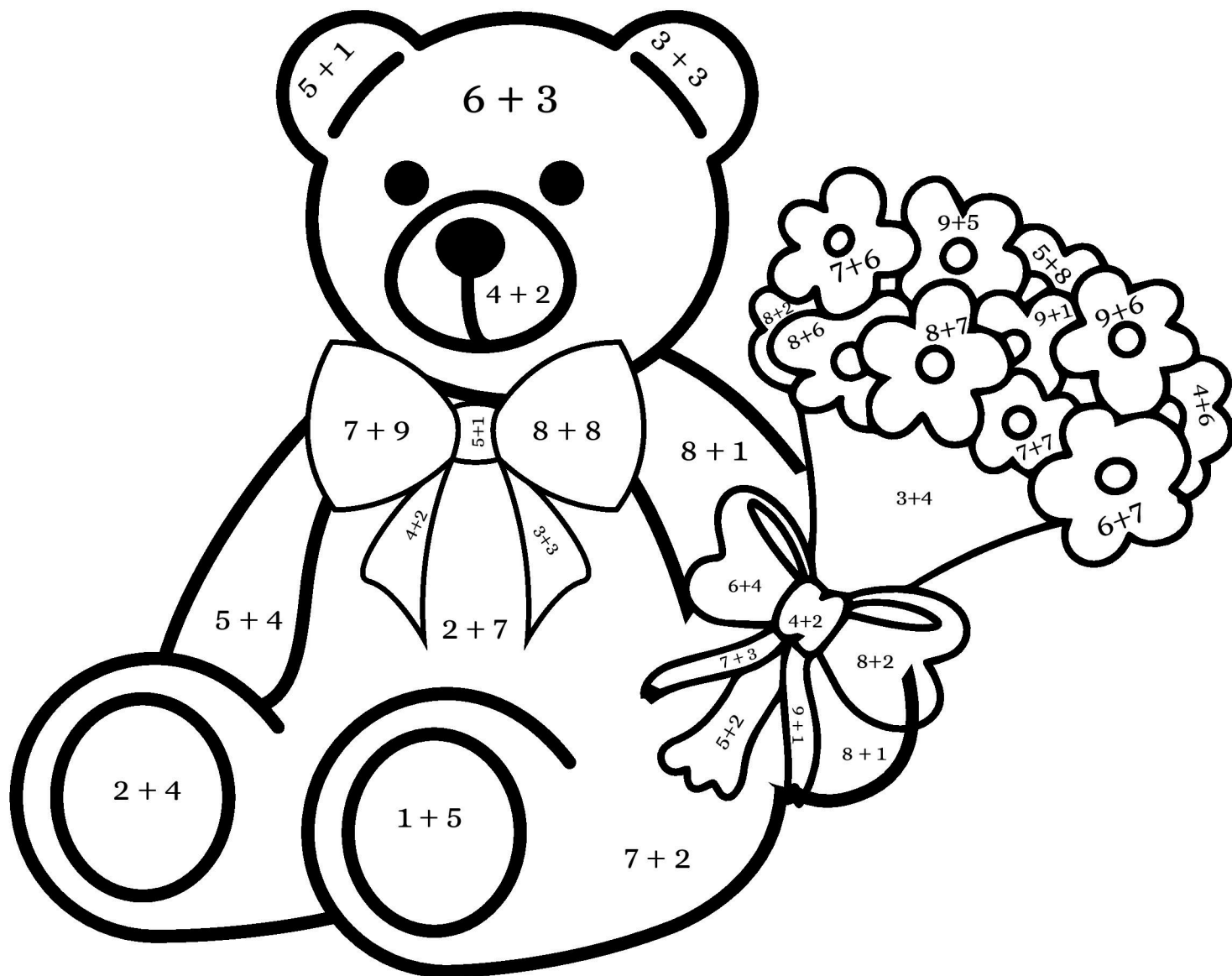
15 = Blue

14 = Yellow

16 = Purple

9 = Brown

7 = Grey



Name _____

Valentine's Day STEM Challenge Worksheets

Worksheet 1: Build a Heart Tower

Objective:

Design and construct the tallest tower possible using heart-themed materials.

Materials Needed:

- Conversation hearts or small candy hearts
- Toothpicks or popsicle sticks
- Tape and glue (optional for stability)

Challenge Instructions:

1. Use only the materials provided to build a tower that stands on its own for at least 30 seconds.
 2. Plan your design before you begin construction.
 3. Once completed, measure and record the height of your tower.
-

Activity Steps:

1. **Brainstorm:** Think about how you'll create a strong and stable base. Sketch your idea below:

[Include a blank box for students to draw their design]

2. **Build Your Tower:** Use your materials to create the tallest structure possible.
 3. **Measure Your Tower:** Record the final height of your tower here:
Height: _____ cm
-

Reflection Questions:

1. What worked well in your design?
 2. What challenges did you face while building?
 3. If you had more time or materials, how would you improve your tower?
-

Worksheet 2: Valentine's Bridge Building Challenge

Objective:

Build a bridge that can support the weight of a small Valentine's object, like a candy heart or a small toy.

Materials Needed:

- Popsicle sticks
- Pipe cleaners
- Tape and glue
- Candy hearts or small toys for weight testing

Challenge Instructions:

1. Use only the materials provided to build a bridge that spans at least 15 cm.
 2. Test your bridge by placing Valentine's objects on it to see how much weight it can hold.
-

Activity Steps:

1. **Plan Your Bridge Design:** Sketch your design here:
[Include a blank box for students to draw their design]
 2. **Build Your Bridge:** Use your materials to create a strong and stable bridge.
 3. **Test Your Bridge:** How many objects could your bridge hold? Record the results here:
_Number of objects: _____
-

Reflection Questions:

1. How did you ensure your bridge was strong enough?
 2. What changes would you make to improve its stability?
 3. What did you learn about balance and weight distribution?
-

Worksheet 3: Valentine's Card Delivery Maze**Objective:**

Design and build a maze to help a "Valentine's Day card" (a small object) travel from one side to the other.

Materials Needed:

- Cardboard or thick paper
- Straws, pipe cleaners, or craft sticks
- Tape and glue
- A marble or small Valentine-themed object

Challenge Instructions:

1. Create a maze on the cardboard using the materials provided.
 2. Test the maze by rolling the object through it from start to finish.
-

Activity Steps:

1. **Design Your Maze:** Sketch the layout of your maze here:
[Include a blank box for students to draw their design]
 2. **Build Your Maze:** Use your materials to create a maze on the cardboard.
 3. **Test Your Maze:** How long did it take for the object to travel through the maze? Record the time here:
Time: _____ seconds
-

Reflection Questions:

1. What changes did you make to improve the maze?
 2. How could you make the maze more challenging or fun?
 3. What did you learn about problem-solving and design?
-

Worksheet 4: Parachute Challenge**Objective:**

Create a parachute to safely deliver a heart-shaped paper or small candy to the ground.

Materials Needed:

- Tissue paper or light fabric
- String
- Tape
- A small heart-shaped object

Challenge Instructions:

1. Build a parachute using the materials provided.
 2. Test it by dropping the parachute from a height and timing its descent.
-

Activity Steps:

1. **Plan Your Parachute:** Sketch your design here:
[Include a blank box for students to draw their design]
 2. **Build Your Parachute:** Assemble your parachute using the materials provided.
 3. **Test Your Parachute:** Record the descent time and observations here:
Time: _____ seconds
-

Reflection Questions:

1. How did your parachute perform?
 2. What changes would you make to improve its design?
 3. What did you learn about air resistance and gravity?
-

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