

Tower Building

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

### **Tower Building Challenge**

#### **Goal:**

To build the tallest free-standing structure on the smallest budget.

#### **Rules:**

- Use only the materials provided.
- Follow instructions carefully.
- All members of the group must participate in building the tower.
- If you “waste” a material, you must pay for it.

#### **Cost of Materials:**

- Straws - \$1 each
- Paper Clips - \$0.25 each
- Masking Tape - \$0.20 each

#### **Job Descriptions:**

- Timekeeper: Keep track of how much time you have left (Your teacher will tell you how much time you have to build your tower)
- Recorder: Record how much of each material has been used & any noise pollution credits that have been bought.
- Spokesperson: Share results with the class.
- Manager: Read instructions aloud to group. Ensure that all members of the group are actively participating.
- Materials Supervisor: Counts materials, cuts & measures tape.

#### **Work quietly!**

If you have to be reminded, you will lose your noise pollution credit. If you need further reminders, you will have to buy an additional credit for \$2. If you save your original credit, you will save \$2!

#### **Follow-Up Questions – Please Complete These Individually For Homework**

- 1) What was the most difficult part of building the free standing structure?
- 2) What problems, if any, did you have to solve?
- 3) What changes, if any, did you make after beginning construction?
- 4) If you could do it again, what changes would you make?
- 5) What geometric shapes are found in your structure?
- 6) What kinds of angles are used in your structure? Why?
- 7) How were integers used in today’s activity?

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**Record Sheet**

\_\_\_\_\_ straws x \$1 = \_\_\_\_\_

\_\_\_\_\_ paper clips x \$0.25 = \_\_\_\_\_

\_\_\_\_\_ of tape x \$0.20 per cm = \_\_\_\_\_

Subtotal: \_\_\_\_\_

(+/- \$2.00) noise pollution credits = \_\_\_\_\_

Total: = \_\_\_\_\_

Height of structure (in cm) = \_\_\_\_\_

**Bonus For Height:**

Highest: subtract \$5

Second highest: subtract \$4

Third Highest subtract \$3

Fourth Highest subtract \$2

Fifth Highest subtract \$1

Final Total: \_\_\_\_\_

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### **Answers – Follow Up Questions**

1-4) Answers will vary.

5) Most likely answers include triangles, square, rectangle.

6) Smaller angles (less than 90 degrees) make the structure stronger.

7) Integers were used when recording the costs of building the structure and calculating the final score.