



November STEM Challenge

Potato Tower



Challenge: How can you use straws and toothpicks to create a tower that will hold a potato 12 cm off a table? At least one straw must go completely through the potato.

Materials:

- 4 straws
- A ruler
- tape
- paper plate/paper towels
- A small potato (approx. 3 cm thick)
- Scissors (you may cut the straws)
- 4 Toothpicks
- pencil

Procedure:

- Use straws and toothpicks to create a tower that will hold a small potato 12 centimeters above a table.
- One straw must go completely through the potato.

Rules- you cannot tape the straws or toothpicks to the potato

**** Teacher demonstration:** At some point you might want to stop students and demonstrate putting a straw through a potato. You will be able to stab a straw through a potato without bending or breaking the straw. Carefully cap off the top end of the straw with your thumb or bend the end over to trap air inside. Then with a quick sharp stab drive the straw into and through the potato. Older students will easily be able to accomplish this however, younger students may need a teachers help.

****What's going on here?** The secret is inside the straw. Trapping the air inside the straw makes the air molecules compress and gives strength to the straw. The trapped air makes the straw strong enough to cut through the potato. Without your thumb covering the hole the air is pushed out and the straw crumples. **MAKE sure to keep your fingers out of the way when you stab the straw.**

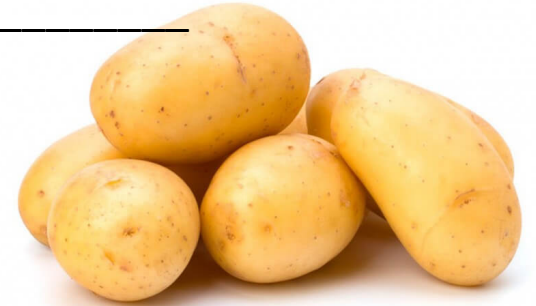
Refecation:

- ✓ Draw or take a picture of your potato tower. Make sure to include labels.
- ✓ Explain why you created your tower the way you did and the revisions you made.
- ✓ Explain how you were able to put a straw through your potato
- ✓ Teachers please submit a list of students who participated by email to the **STEM Resource Center** stem@gstboces.org
- ✓ **Teachers- Please make sure that your list has your name, school district, grade level and return address included.**
- ✓ **This challenge is Due: 11/30/2018**

NAME _____ Grade _____

Teacher _____ School _____

Potato Tower Challenge



Materials: straws small potato toothpicks scissors ruler tape paper plate

*** One straw must go through your potato*

STEP 1: Draw your tower.

Use labels to show the material you used

STEP 2: Explain how you built your tower

STEP 3: Explain how the straw went through your potato.

NAME _____ Grade _____

Teacher _____ School _____

Potato Tower Challenge



Materials: straws small potato toothpicks scissors ruler tape paper plate

*** One straw must go through your potato*

STEP 1: Make a plan with your group.

Draw and label your tower.

Step 2: Draw your tower.

Use labels to show the material you used

Before

After building

STEP 3: Explain how you created your tower

STEP 4: Explain how you were able to put a straw through your potato.

STEP 5: Write about the changes you made to improve your tower.
