



STEC@UKZN

"Lock Down"



DEAR FAMILIES

Welcome to the twelfth issue of the STEC@UKZN "Lock Down". Missed the first issues? Find them at http://www.stec.ukzn.ac.za/lockdown_activities.aspx

Join us this Thursday for our "live" workshop on "DNA - Discover the recipe for life". For more information or to register contact us via email on: stec@ukzn.ac.za

WHAT ANIMAL AM I?



I have 4 legs.
I can be both a vermin, or a pet.
I traveled to the Moon and circled it 75 times on the 1972 Apollo 17 mission.
I have facial expressions to communicate my mood to others.
I have poor eyesight and I use my sense of smell to locate food and avoid predators.
Musophobia (the fear of my kind) is one of the most common phobia.
I am one of Disney's most famous characters.
I have a pointed snout, small rounded ears and a body-length scaly tail.

WHAT FRUIT OR VEGGIE AM I?



I am classified as a fruit but I am commonly used as a vegetable.
I am a good source of fiber, vitamin C, magnesium and potassium; as well as a source of vitamin A.
I will keep 1-2 months when stored in a cool, dark, and dry place.
I have tan-yellow skin and orange fleshy pulp with a compartment of seeds inside one end.
I am a winter squash and grow on vines.
You often get me as a vegetable side dish in restaurants.

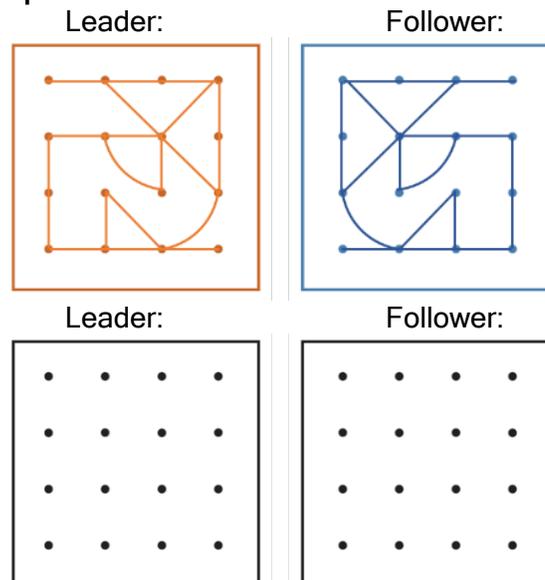
What you need.

- Paper and pen/pencils for each player
- A mirror if necessary

How to Play:

- Draw 2 boxes with 4 dots in each row and column.
- Decide who the Leader is and who the Follower is.
- Leader: Join two dots in your box.
- Follower: draw the reflection (mirror image) in your box.
- Leader: Join two more dots in your box.
- Follower: draw the reflection again in your box.
- Go on like this until you have both drawn 12 lines. Is the Follower's reflection accurate? You can check with the mirror. The mirror image of the Follower box should look exactly like the Leader box.
- For the next game, swap roles.

Example:



Source: www.beam.co.uk



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MATHEMATICS CHALLENGE

Can you find 34 ways to make a sum of 11 in this puzzle? The numbers must be connected horizontally, vertically or diagonally. The connected numbers must be in one straight line. For example: $3+8=11$

4	2	5	9	2	8	5	2	8	4
1	7	9	3	5	9	8	4	9	6
8	7	9	5	9	9	6	2	4	3
8	9	7	5	8	6	3	1	5	3
3	6	6	7	11	5	7	4	9	
5	9	4	6		1	1	6	9	
2	2	9	2	4	8	9	1	8	1
5	3	6	7	1	4	6	7	8	1
2	8	7	5	2	3	8	8	9	4
7	7	4	4	3	2	8	2	1	2



Source: <https://www.edu-games.org/math/games/addition-sum-search-worksheet.php>



"ESSENTIAL GOODS" EXPERIMENT

Grow Borax crystals

With a little kitchen science you can create sparkling flowers or hearts.

You will need:

- A small container (large jam jar works well)
- 4-5 tablespoons borax (e.g. from Dischem)
- 1 cup of boiling water
- A pipe cleaner bent into a heart or flower.
- Toothpick

What to Do:

1. Fill the jam jar with boiling water.
2. Add the borax one teaspoon at a time to the boiling water, stirring to dissolve after each addition. It is okay if some undissolved borax



settles to the bottom of the jar.

3. Hang the pipe cleaner shape into the container so that the toothpick rests on top of the jam jar and the pipe cleaner shape is completely covered with liquid and hangs freely (not touching the bottom of the container).
4. Allow the container to sit in the fridge overnight.

NB: BORAX IS HARMFUL IF CONSUMED!

What's Happening?

A crystal is a solid that consists of various atoms being arranged in a uniform repeating pattern. This arrangement is responsible for the shape of the crystal. In Borax, Sodium (Na), Boron (B), Oxygen (O) and Hydrogen (H) are the atoms that determine the appearance of the Borax crystals. The crystals may be big or little, but they all have the same "shape".

How do the Borax Crystals Grow?

In a solution, water can only hold a certain amount of borax. When the temperature of the solution is increased, hot water can dissolve a more solid substance than cold water. This is because heated water molecules move farther apart, making room for a more solid substance to dissolve. When no more of the solid substance can be dissolved, the solution is said to be saturated. As this solution cools, the water molecules move closer together again and there's less room for the solution to hold onto as much of the dissolved solid. Crystals begin to form and build on one another as the water lets go of the excess borax.

Adapted from:

<http://chemistry.about.com/cs/howtos/ht/boraxsnowflake.htm>

Solution:

What animal am I:

Mouse

What fruit or veggie

am I: Butternut

Mathematics

Challenge:

4	2	5	9	2	8	5	2	8	4
1	7	9	3	5	9	8	4	9	6
8	7	9	5	9	9	6	2	4	3
8	9	7	5	8	6	3	1	5	3
3	6	6	7	11	5	7	4	9	
5	9	4	6		1	1	6	9	
2	2	9	2	4	8	9	1	8	1
5	3	6	7	1	4	6	7	8	1
2	8	7	5	2	3	8	8	9	4
7	7	4	4	3	2	8	2	1	2