



UNIVERSITY OF
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Issue 7



STEC@UKZN

"Lock Down"

DEAR FAMILIES

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

Join us this Thursday for our "live" workshop on "Things that Fly". For more information or to register contact us via email on: stec@ukzn.ac.za

WHAT ANIMAL AM I?



I am a mammal, but I can fly.
I usually eat either fruit or insects.
People love my poo, because they can use it as fertilizer, and in the past to make gunpowder.
Just like cats, I love cleaning myself and use my hind feet as combs.
Most of us are very social and live in colonies.
Some of us use ultrasonic sounds to get a picture of our surrounding.
In China, I am associated with happiness, joy and good fortune, not in the Western world though.
They even named a comic superhero after me.



WHAT FRUIT OR VEGGIE AM I?

I grow on trees that can get as high as 10 m.
I come with a tough skin (peel) that protects my inside.
I am an excellent source of vitamin C.
I am the offspring of a pomelo and a mandarin.
My flowers can be used to make perfume.
I was first mentioned in Chinese literature 314 BC.
I sometimes have pips.
My peels contain a chemical that is flammable.
Paul Cézanne, Vincent van Gogh, and Pierre Auguste Renoir painted me.
They even named a colour after me.



Gefüllte Kalbsbrust

Apologies if I use the German name for the game, but I could not find the English name. If you know the name, please e-mail it to me.

This game is not only for children but it is used as mind training for elderly people as well.

What you need.

- Paper and pen/ pencils for each player

How to Play:

One of the players calls out a word. Everybody writes the letters of this word from top to bottom and leaving a gap, the letters from bottom to top.

The task is it to find words that start with the letter in the first column and finishes with the letter in the second column.

You can either set a time limit, or you can finish, once the first player has filled every row with matching words and announces it, saying "Stop". You get a point for every word. And of course the person with the maximum number of points wins.

Example: Learning

L	on	G
E	ve	N
A	lumn	I
R	ai	N
N	eighbou	R
I	mpal	A
N	ic	E
G	oa	L

Adapted from: <https://www.einfachbewusst.de/2017/10/papier-und-stift-spiele/>



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MATHEMATICS CHALLENGE

36	÷		+	4	=			
		x		+				+
	-	5	=	18				27
+		=		=		÷		=
		45			x	5	=	
=						=		
34		19	-		=	12		3
		+		x				x
72	÷		=					17
		=		=				=
				56	-		=	



Idea: <https://www.education.com/worksheet/article/math-crossword/>



"ESSENTIAL GOODS" EXPERIMENT

Self-inflating balloon using yeast

You will need:

- A packet of yeast
- A small, clean, clear, plastic (soda) bottle
- 1 teaspoon of sugar
- some warm water
- a small balloon

What to Do:

1. Blow your balloon up just to give it a little bit of a stretch. Then put it aside.
2. Fill the bottle up with about 2 cm of warm water. (When the yeast is cold or dry the micro-organisms in the yeast are resting.)
3. Add all of the yeast packet into the bottle and gently swirl the bottle for a few seconds.

4. Add the sugar and swirl it around some more.
5. Put the neck of the balloon over the top of the bottle and allow the bottle to sit for a while in a warm place, such as a sunny windowsill.

What do you see?

What's Happening?

As the yeast dissolves, it becomes active. You won't be able to see yeast with your naked eye, because yeast is a microscopic fungus organism. Like people, yeast needs energy (food) to be active; that is why we add sugar to our experiment. The yeast causes the sugar to turn into various products. One of these products is the gas, carbon dioxide. You might notice small bubbles in your yeast liquid at the bottom of the bottle. With no place to go but up, this gas slowly fills the balloon.

A very similar process happens in your bread. Carbon dioxide from yeast fills thousands of ball-like bubbles in the dough. This is why your bread has holes in it once the bread has baked.

Try this:

Use the same experiment with water at different temperatures. You can use a thermometer to measure the temperature of the water. At what temperature is the yeast most active (produces the most carbon dioxide)? At what temperature is it unable to blow up the balloon?

Adapted from: STEC@UKZN National Science Week handout

<https://www.exploratorium.edu/cooking/bread/activity-yeast.html>

Solution:

What animal am I: Bat

What fruit or veggie am I: Orange

Mathematics Challenge:

36	+	9	+	4	=	8		83
		x		+				+
23	-	5	=	18		60		27
+		=		=		+		=
11		45		22	x	5	=	110
=						=		
34		19	-	7	=	12		3
		+		x				x
72	÷	9	=	8				17
		=		=				=
				28		56	-	5
					=			51