WHAT HAPPENS NEXT?

An Institute of Physics Workshop

No Boundaries. No Barriers.

Primary Science Teaching Trust Conference

Belfast, 2016

David Keenahan & Paul Nugent
What happens next?

- Interactive strategy for all ages
- Helps develop thinking skills
- Aids group activity/involves students
- Helpful insights into basic physics
- Explores some misconceptions
- Talking through problems with others, helps us order our thoughts
- Talk provides tools for thinking
- Fun Physics
What happens next?

USE AS
SIMPLE STARTER OR END OF LESSON PLENARY, REVISION
ASSESSMENT FOR LEARNING
END OF TERM QUIZ ACTIVITY

Opportunity for OUTREACH/PARENTS EVENING

Click on logo to view video from www.scienceonstage.ie
Bounce the ball at an angle of about $45^\circ$ under the table in an attempt to bounce it through.

What will happen to the ball?
What keeps the balloon inflated?

a. Magic
b. Atmospheric pressure
c. Friction
d. Something else
The paper clip climbs the elastic because of

a. Telekinesis
b. Magic
c. Friction
d. Magnetism
e. Something else
If these 4 jars of sugar are roll down an incline, which will get to the bottom last?

a. The heaviest
b. The lightest
c. All get to the bottom at the same time
d. Some other outcome
If the central potato chip is suddenly pushed closer to the extreme potato chip will ....

a. It stay there
b. Return to its starting point
c. The other chip be dislodged
WHN 6:  Beads in a balloon

One balloon containing polystyrene beads is blown up with a pump, the other using human breath.

What will be the difference in what you observe?
A fork and spoon are balanced with a matchstick on a glass.

What happens fork and spoon when the match is burnt?

a. The fork and spoon fall

b. The fork and spoon stays balanced

c. Something else
When the hand releases the Slinky will it

a. Fall open and close on landing

b. Close gradually as it falls

c. Close first and then fall the rest of the way
If the grey tape is stretched tighter, will a wave travel

A. Faster       B. Slower       C. Same speed
When the can is pushed the can rolls back
Why?

a. There is a mouse inside
b. It is attracted by a magnet
c. It contains a piece of Dark Matter from CERN
d. It has an engine
Three candles of different lengths are lit and covered by a glass jar.

What happens the candles?

a) The tallest goes out first
b) The middle one out first
c) The smallest one goes out first
d) They all stay lit
e) They all go out at the same time
WHN 12: The Genie in the bottle

When the Genie is woken up she holds onto the rope

Because

a. Magic

b. An optical illusion

c. There is something in the bottle called a “Genie”

d. Something else
What Happens next?

Part 2
Activity part of the Workshop

- Working in groups of three
- Slide of each Activity on the screen
- Paper worksheet of each activity on the desks of each group
- David & Paul facilitating
Activity 1       Bendy straws

Assemble straws as shown. Blow air in one end. What happens next?
Activity 2    Sound sandwich

Assemble sound sandwich as shown.
Blow air through the gap
Move one straw to change the length of the rubber band.....what happens next?
Activity 3  Attract & Repel

Assemble the charge tester as shown.
Charge the straws by rubbing with cloth.
Test if they repel or attract.

Try glass in the hand that held a straw.

What happens next?
Activity 4 Pendulum

Set up the stop-watch on your phone.

Record the time for 10 return journeys.

How long for one return journey?

Increase the length of the string.

What happens next?
Activity 5: Squishy Circuits

Make the LED light ---- Does it matter what way things are connected?
Can you make series and a parallel circuits?
Investigate how some materials conduct don't conduct?
Can you make a switch?
Activity 6  Thermo chromic Film

Try the following experiments
What do notice? Anything unusual?

Place your hand on the film
Place different objects on the film - heat with your fingers
Blow on the film – does it cool down?
Activity 7  Mirrors at 60°

Set up the mirrors as shown.
Record how many red pillars you can see at each value of angle 90°, 60°, 45°.
Look at your results.
What should happen next when the mirrors are at 30°?
Activity 8  When will the ladder slip?

Set up the ladder and record $x$ and $y$.
Increase $x$ by one cm each time.
When the ladder slips calculate

$$\frac{x}{y}$$

The bigger the answer, the rougher the floor.
Change the floor surface.
What happens next?
Activity 9  Bungee Spring

Add a small load to the spring.
Pull down the load 2cm further and let go.
Find the time for ten return journeys.
Increase the load. What happens next?
Activity 10  Graph of a paper cup

Set up the marble shute as shown.
Record how far the cup moves.
Add an extra cup each time.
What happens next?
Conclusion

Evaluation Forms

Resources

Contact Details

Thank you for coming!
Thank you for participating today

dkeenahan@gmail.com
paul.nugent@gmail.com

IoPIteachers