

# Cycle 3 Science Script

## Week 1 #68 Blinking



Song to the tune of Pop Goes the Weasel



The Scientific Method is Purpose Hypothesis Materials Procedure (pop!) Results Conclusion

**Purpose – To demonstrate the persistence of vision.**

*Links to Week*

*#5 – What are your five main senses? Sight Hearing Taste Smell, Touch*

*#4 – What are three parts of the nervous system? Brain, Spinal Cord, Nerves*

Introduce Experiment

(Questions)

How long can you hold your eyes open before you blink? **Not very long!** When you blinked did everything turn Black? **No.** But when you blinked didn't you shut out all the light to your eyes?

(Purpose)

Has anyone here seen a strobe light used – like in a play or at a ballet? Strobe lights interrupt the picture you see in your mind don't they? Hmmmm, I wonder why everything doesn't look dark every time we blink. How is it that I see an uninterrupted picture in my mind in spite of all the blinking I do every day?

(Materials)

Each of you has a pencil, some tape, and two pieces of paper - one with a face that has both eyes open and one with a face with one eye winking or closed.

(Hypotheses)

In a minute we are going to perform a little experiment with these simple materials but before I do let me ask the question...How many of you think we can use just these two pictures to make the face wink at us?

(Procedure-results)

Take your two faces and line up the one exactly on top of the other on your desk. Now tape both pieces at the top only securely down on the desk. Tape the pencil like so to the bottom edge of the top picture. Now watch the face while you roll the pencil up and down so the top picture goes up and down like a roller window shade.

(Results)

What happened? Did the picture in your mind switch back and forth between an open eye and a closed eye or did the face suddenly seem to wink at you? It winked at us didn't it? If it didn't wink try rolling your pencil a little faster and see what happens.

(Conclusion)

Rolling the paper strip back and forth allows you to see each face for a very short period of time. Your eye can hold onto an image for about  $1/16$  of a second. This retention of the image is called persistence of vision. When the next image appears in less than  $1/16^{\text{th}}$  of a second, your brain doesn't register the transition so you see movement instead of individual separate pictures.

Did you know this very idea is the principle behind cartoons and animated movies? Movies whether drawn or "live" are really only made up of a series of pictures shown one right after the other very quickly. Saturday morning cartoons usually show about 8 drawings per second. Animated films that are higher quality show 12 drawing per second. A "live" movie with real people or animals usually runs 24 pictures per second. (source Wikipedia)

The idea that I can watch Cinderella, and Snow White are wonderful but I am even more grateful that God in his wisdom designed my eye so that I don't see everything as if a strobe light were flashing all day long! So, when you go to bed tonight and turn out the lights but can still "see" enough to safely make it into bed think of persistence of vision and God's loving care when he designed your eyes.