

## Balloon Pop Fail

*Have you ever been startled when a balloon suddenly pops? Have you ever thought about why a balloon just seems to explode when you put a pin in it?*

For this week's activity, we thought it would be fun for you to see if it is possible to put a pin in a balloon without it popping.

**ADULT SUPERVISION REQUIRED – Before collecting any materials you must get adult permission. Additionally, you will require a badge with a pin for this activity. Pins can be very useful but also very dangerous if used incorrectly. YOU MUST WORK WITH AN ADULT FOR THIS ACTIVITY!**

### **Suggested instructions:**

#### Equipment and resources

- Several balloons.
- A badge with a pin (**Don't use needles as they can easily be lost**).
- A roll of tape (Sticky tape or masking tape).
- Scissors to cut the tape.

#### Steps:

1. Blow up a balloon.
2. Cut two pieces of tape about 10cm.
3. Place the two pieces of tape on the balloon to make an 'X'.
4. Very carefully, push the pin from the badge into the middle of the 'X' (**ADULT SUPERVISION**).
5. Observe what is happening? Has the balloon popped? Is air escaping the balloon?

#### Thinking time:

When a sharp object such as a pin is pushed into a balloon, the air comes out at such a force that it ends up ripping the hole making it larger. It comes out at a force because the air inside is under pressure, being squeezed by the elastic material. A hole in the balloon causes it to pop. However, when additional material is added to the balloon such as



tape, the tape holds the balloon together, stopping the hole becoming bigger. Air will still escape the hole but at a much slower rate.

Follow up:

- Can you try different material to make the 'X'?
- How about trying the same experiment but this time with less or more air in the balloon? Try different shapes of balloons, does this make a difference?