Question:
Will a balloon pop faster on one screw or a bed of screws?

Hypothasis

If a balloon is placed on one screw, it will pop faster than a bed of screws because for one screw the pressure is focused on one sharp point instead of the pressure being evenly distributed.

Materials:

Table Saw
Drill
Measuring Tape
Pencil
Sharpie
Screws
Wood
Balloons
Scale
Rice
Baggies
Scissors
Cardboard
Scotch tape

Step One:

Gather all supplies from home, shed and store.

Step Two:

-Measure plywood, posts and support beams.

-Cut everything to size with a table saw (ask an adult with help for this part)

-Place plywood on a flat surface.

-Draw a guidance line through the middle of the sheet of wood widthwise.

-Add posts to all corners and the edges of our guide line in the middle.

-At the top, add support beams.

-Flip it over so that the bottom is facing up.

-Measure from the middle of the board to the outer edge to find the middle for the left side.

-Drill in one screw.

-Do the same on the right side, but add many screws close together to make a "bed of screws.".

-Flip the whole thing back over.

-Measure the open space at the top and make a small cardboard basket to hold the weights.

-Your experiment box is now complete.

Step Three:

-Put the same amount of rice into small baggies.

-Use a scale to make sure each bag weighs equal amounts (in this case, they each weigh 150 grams)

Step Four:

-Blow up two balloons using the same number of breaths so they are the same size.

-Place one balloon on the side with a single nail.

-Be careful not to push on it.

-Gently place the weight basket on top of the balloon.

-Add rice bags one at a time until the balloon pops.

-Repeat this on the side with the bed of screws and see if this side can handle more weight.

The website I used to gather some of my information is: https://www.Perplexity.ai

-A balloon can hold more weight on a bed of screws vs. being on one screw.

-One screw has a tiny sharp contact point, so the balloon material will stretch quickly, popping the balloon.

-When a balloon is pushed down on a bed of screws with the same force, it is divided among many tips, so each tip only carries a fraction of the force.

-I learned that I am able to screw in screws with only a little bit of help, which surprised me!

Conclusion:

My hypothesis was correct.
A balloon pops faster on one screw than on a bed of screws because, on one screw, the pressure is focused on a single sharp point. On a bed of screws, the pressure is spread out evenly, so the balloon does not pop as quickly.