Sticky Secrets:
Unveiling the Gecko's Defiance of Gravity
Student Worksheet

Stick it On: Place the plastic wrap on each surface, smoothing it out gently. Observe and record observations how easily or firmly it adheres to each texture. Use descriptive terms like "sticky," "slippery," or "grabbed." in the observations

Texture	Observation

Surface Area Matters: Compare the gripping ability of the plastic wrap on larger and smaller areas of the same texture.

1. Choose one of the textured objects to test.
2. Divide a textured object (sandpaper, cloth, etc.) into two sections of different sizes.
3. Mark the outline of each area on the plastic wrap before sticking it to the object. Calculate the surface area of each piece. Record this below.
4. Qualitative Observations: Gently pull the plastic wrap from each area of the same texture, starting with the smaller one. Observe and compare the ease or difficulty of removal, noting any differences in resistance. Record this below.
5. Quantitative Observation: After the tug-of-war, repeat the experiment and record the force required to remove the plastic wrap from each area using a spring scale. Record your results.
6. Timing the Grip: Use a stopwatch to measure the time it takes for the plastic wrap to detach from each surface.

Textured Surface:		
Surface Area:		
Qualitative Observations	Qualitative Observations	Time to detach
Surface Area:		
Quantitative Observations	Qualitative Observations	Time to detach

After discussing your results with your classmates who have tested other surfaces, compare the results with the calculated surface areas and describe any observed relationships.

Brainstorm your designs- List at least 4.

Which design did you choose? Why did you choose this one?

Draw and label your design here.

How will you test your design?

Add your data here - be sure to include qualitative and quantitative observations.

Did you need to make improvements based on your testing? Explain.

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