

SLIDER'S GLIDER

GOAL

Students will recognize that an existing design can be refined and optimized to improve the way it performs.

GRADE LEVEL

Upper elementary

DISCUSSION

Ask kids if they've ever wanted to make a change to something to make it work differently. Explain that inventors and engineers do this, too. First they identify a key feature (or features) that needs changing.

Then they test each change and keep track of the results. They do this until they get the performance they want. This part of the engineering process is called refining and optimizing.

MATERIALS

- Precut glider strips (6 – 8 per child)
- Straight plastic straws
- Scissors
- Masking tape
- Transparent tape (1 roll per pair of kids)
- Tape Measure
- Pencils, paper
- "Test Results" handout



least 15 feet from the starting line for the gliders to glide.

ACTIVITY

1. Toss the demo glider, small loop leading, and measure its flight distance. This will be the Slider's Glider distance to improve on.
2. Distribute the "Test Results" handout and review how to record their tests.
3. Challenge kids to build their own gliders and to keep refining their glider design in order to optimize its distance.

As they work, ask questions: what part of the glider do you want to change? Should you use different-sized loops? Add more loops? Put the loops in different places on the straw?

Tip: As kids experiment, encourage them to make just one change at a time before testing the results.



4. Once each pair has found the design that glides the farthest, invite them to share with the whole group what changes they made to get the results they wanted.

Glider strips: cut an 8 x 11 paper into 1" strips, marked in 1" segments (Tip: make a master template to photo copy.)

"Test Results" handout

Changes I Made	Distance
Slider's Glider No changes	___ feet
My 1st change	___ feet
My 2nd change	___ feet
My 3rd change	___ feet

SETUP

1. Make a demonstration glider: Make 1 glider strip 3 segments long and another 6 segments long. Tape the ends of each strip together to make 2 loops. Tape the loops to opposite ends of the straw (on top of the straw, openings facing each other).
2. Mark a starting line with masking tape. Allow at

CONNECT TO ENGINEERING

In real life, engineers see a challenge, invent a prototype to address the challenge, and then test, redesign, and retest many times before going into production. For a fun view of this process showing middle-schoolers building a prototype shoe for skateboarding, see "Extreme Enough?" on www.discoverengineering.org.

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