

# Helicopter Happening

Variables are factors, conditions, and/or relationships that can change or be changed in an event or system. In this investigation you are going to identify and manipulate variables.

## Directions

Working with a partner fold wing A forward and wing B backwards.

**Predict what will happen when you release your helicopter.**

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Hold the helicopter in one hand. Raise your hand as high as you can and release the helicopter. Watch it drop to the floor.

**Record your observation.**

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**Can you modify your helicopter to make it spin the other way? Try it.**

**Discuss your results with your group**

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**Design a helicopter that spins as fast as possible.**

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**In your group discuss some possible variables that could affect how it spins?**

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**What further questions do you have about paper helicopters?**

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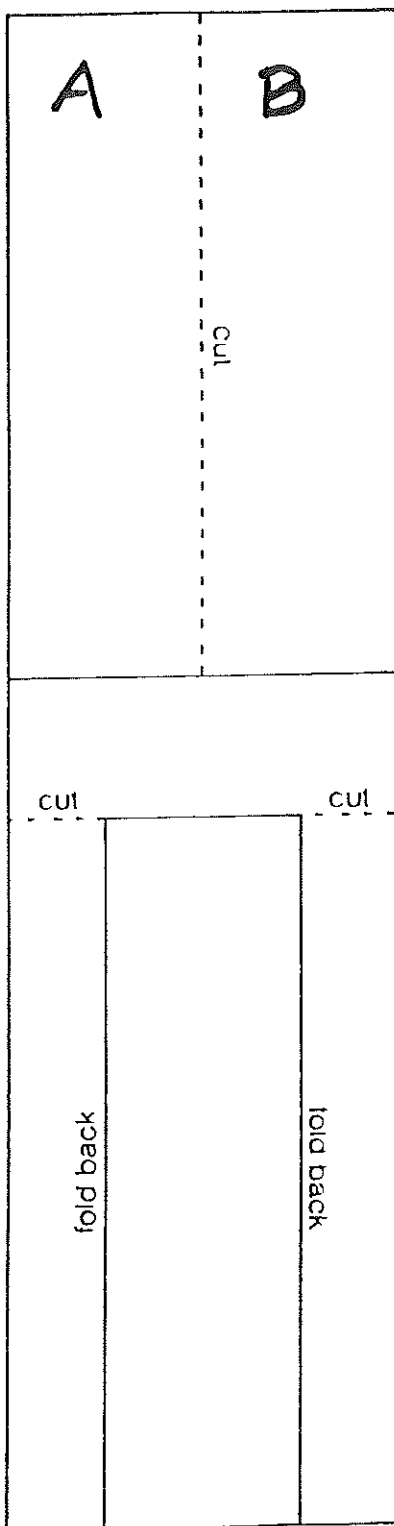
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**Questions that help lead students through the stages of purposeful/accountable talk in a science investigation.**

<b>Stages of Investigation that Support Accountable/Purposeful Talk</b>	<b>Key Questions</b>
Observation Problem Question Identification	What do you observe? What question does this helicopter model raise? (Quite often the student will ask, "why does the helicopter spin?")
Hypothesis, Guess or Inference	Why do you think you need to fold the wings for the helicopter to spin? What could have caused this? Why do you think caused the helicopter not to spin?
Determine Procedures for answering the question or solving the problem	What could one do to check your guess, hypothesis or inference?
Collect and Record Data	What evidence can you actually observe that would support one or another of the guesses? What additional evidence do you need in order to decide which is the most logical explanation? Which can we test in the field? How should we proceed? Which could we test in the classroom? What information do you need to gather in the field to take back? What instruments are needed to collect other pertinent data or information? Can you devise any controlled experiments to test your guesses?
Recheck Guess, Hypothesis, Inference	How do the results, data, or information gathered relate to your guess, inference or hypothesis?
Make conclusions or start Over if necessary	What did you find out? What happened in your experiment? If you were to redo the experiment, how would you get accurate results?

# *R*otating Object for "Helicopter Happening"



## KWL Chart

Group \_\_\_\_\_

Name \_\_\_\_\_

What I know about the parts of the cell.	What I want to know about the parts of the cell.	What I learned about the parts of the cell.