

# PREVIEW

## LOGIC LINE-UP.



blades

camera

battery

legs

**MARS**  
HELICOPTER

GIANT SCIENCE  
SCIENCEGIANT

# PREVIEW

## Logic Line-Up: MARS HELICOPTER PUZZLE

Team members each role play a different item and use deductive thinking to sequence themselves.

Develop your students' thinking skills with hands-on cooperative logic activities. You copy the provided picture cards and clues for your students. They work in teams to figure out how to use the clues to line up their cards in the correct order. Build your students' deductive thinking skills, spatial reasoning, spatial vocabulary, and teamwork skills with these ready-to-use, logic activities. You'll find problems, answers and reproducible, line-up cards.

Set up: each team receives four object cards.

1. Teammates stand shoulder-to-shoulder, each holding a card. If unable to stand, students can remain sitting.
2. The teacher reads the first clue to problem one.
3. The student mentioned in the clue describes how he/she will line up based on the clue. He/she checks with teammates for agreement. If students disagree, they discuss why. Note: if more than one teammate is mentioned in a clue, they each describe their reasoning and check with teammates for agreement.
4. The student physically moves to his/her place in the team line up and displays card.
5. After the teacher reads each clue, students repeat steps 3 and 4.
6. When all clues have been read and acted on, the teacher calls on one team to describe their order and reasoning.
7. The teacher either corrects or approves the team's reasoning.
8. The teacher either provides a correction or provides correction opportunity. Other teams listen and either celebrate or correct team positions.
9. The process is repeated for the next problem.

### Florida Next Generation Sunshine State Standards

- SC.8.E.5.10 Assess how technology is essential to science for such purposes as accessing information and other remote locations, sample collection, measurement, data collection and storage, data analysis, and communication of information.
- SC.8.E.5.11 Identify and compare characteristics of the electromagnetic spectrum such as wavelength, frequency, use, and hazards and recognize its application to an understanding of planetary images and satellite photographs.
- SC.912.E.5.7 Relate the history of and explain the justification for future space exploration and continuing technology development.
- SC.912.E.5.8 Connect the concepts of radiation and the electromagnetic spectrum to the use of historical and newly developed observational tools.



**Logic Line-Up: MARS HELICOPTER PUZZLE (TEACHER'S EYES ONLY!)**

Battery is next to Legs  
Blades is close to Camera  
Battery is to the right of Camera  
ANSWER: Blades, Camera, Battery, Legs

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Blades is not first or last  
Camera is to the left of Blades  
Either Battery or Legs are last  
Legs is next to Battery  
ANSWER: Camera, Battery, Legs, Battery

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Legs is next to Battery  
Blades is far from Legs  
Camera is in front of Blades  
ANSWER: Legs, Battery, Camera, Blades

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No parts are between Legs and Blades  
No parts are between Camera and Battery  
No parts are between Blades and Camera  
ANSWER: Legs, Blades, Camera, Battery

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The one that helps with landing is second  
The one that takes pictures is as far from Blades as possible  
Either The one that takes pictures or The one that helps with landing is last  
Battery is to the right to Blades  
ANSWER: Blades, Legs, Battery, Camera

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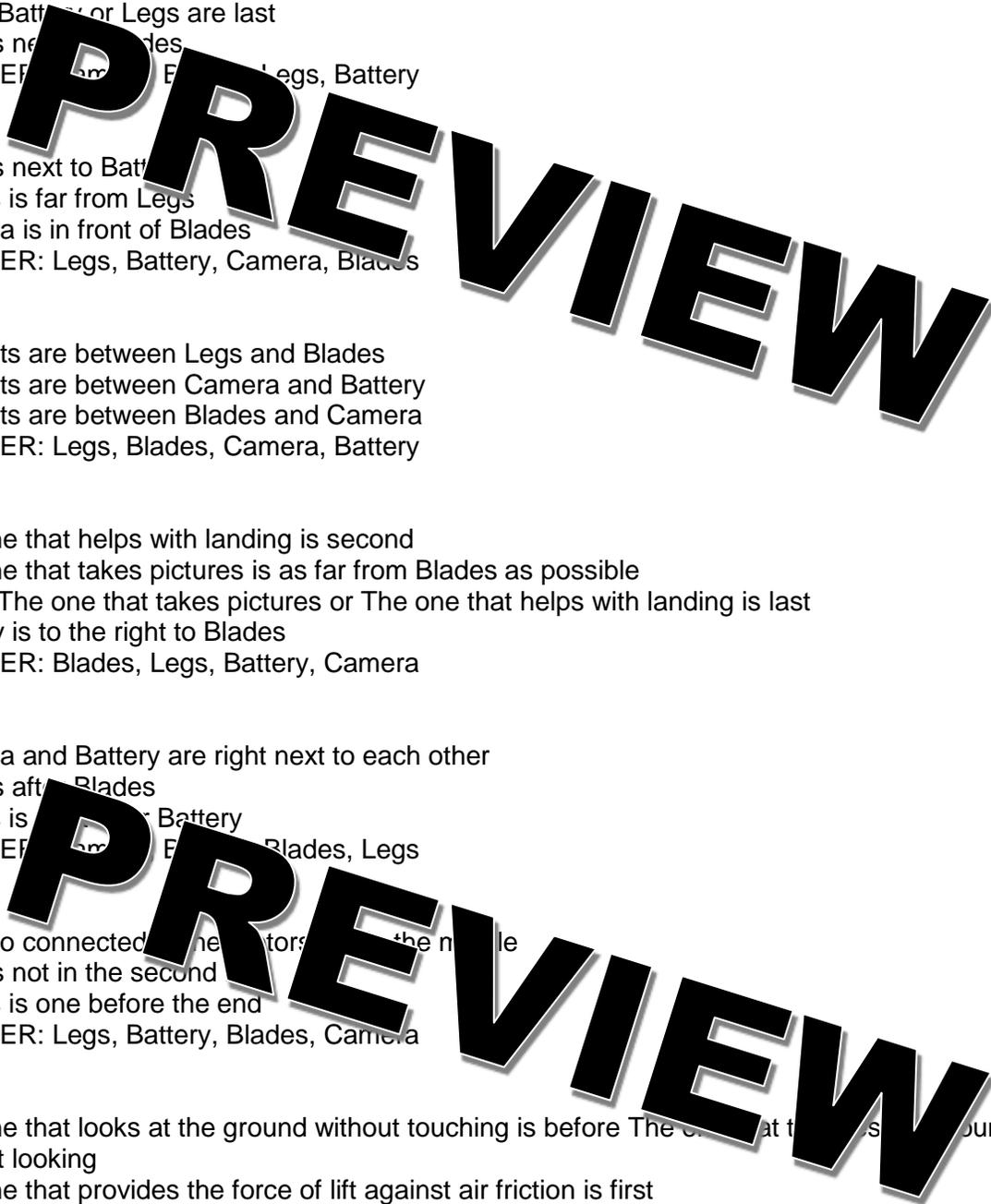
Camera and Battery are right next to each other  
Legs is after Blades  
Blades is next to Battery  
ANSWER: Camera, Battery, Blades, Legs

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The two connected rotors are the middle  
Legs is not in the second  
Blades is one before the end  
ANSWER: Legs, Battery, Blades, Camera

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The one that looks at the ground without touching is before The one that touches the ground without looking  
The one that provides the force of lift against air friction is first  
The one that provides the force of weight against the ground friction is second  
ANSWER: Blades, Legs, Camera, Battery





motors and rotor blades

**BLADES**



camera  
sensors

**CAMERA**



←landing legs→

**LEGS**



solar panel

battery pack

**BATTERY**

**PREVIEW**