

Lesson Title: To Fly or Not to Fly

Grade level: 2nd/3rd

Standards:

3.ESS2.2

Associate major cloud types (cumulus, cumulonimbus, cirrus, stratus, nimbostratus) with weather conditions.

3.ESS2.3

Use tables, graphs, and tools to describe precipitation, temperature, and wind (direction and speed) to determine local weather and climate.

Materials:

- ✓ Large month-long calendar
- ✓ Cut-outs of weather symbols (see below)
- ✓ Large sheets of paper for two graphs
- ✓ 8"x10" sheets of paper for each child to make a paper airplane
- ✓ Rubber cement or two-sided tape

Phenomenon: Show video clip (2:22) of Blue Angels flying in formation.

<https://www.youtube.com/watch?v=KKkbSch90qs>

Engage: Discuss and record students' observations of the Blue Angel flight shown.

Question: How would you describe ideal weather conditions for flight? Is it important to base flight on weather conditions? Why or why not?

Introduction: It is indeed important to base flight upon weather conditions at take-off as well as the flight path. Extreme weather is dangerous to fly in; pilots must avoid flying in weather that is too windy, too rainy, or too snowy.

- Your students will be basing their decisions on paper airplanes, but that's not too far different from the small plane without the fancy instruments of the larger ones.

Before the lesson/ teacher prep: Cut out the weather symbols. Get a large calendar. Make two large graphs. One graph should have the number of days

up the left side and five columns across for Rainy, Snowy, Sunny, Cloudy and Windy. The second graph should have the number of days up the left side and two columns for across for "Flying Today" and "No Flying Today".

Procedure:

1. Help the students use the blank paper to make simple paper airplanes.
2. Allow students time to fly their paper airplanes inside.
3. Put up the calendar and graphs where students can easily see them. Explain that you will all be evaluating the weather each day to determine whether or not it is a good day to fly the paper planes outside. Their decision will then be marked on the fly/do not fly graph.
4. Question students about the differences they notice in the sky during fair weather and poor weather. Review the different cloud types and what type of weather they best reflect.
5. Review weather tools used to predict and/or evaluate weather conditions.
6. Ask questions like:
 - What have you noticed about the weather today?
 - What did you notice yesterday? Are there any similarities? Differences? What could happen outside that would make it a GOOD day to fly?
 - What could happen outside that would make it a BAD day to fly?
7. Show the students the weather symbols and explain that they will decide upon an appropriate symbol for each day.
8. Before recess, have students make the decision about the kind of weather they observe.
9. Put the appropriate weather symbol on the calendar with rubber cement (on one side only, so you can pull it off easily) or with two-sided tape.
10. Have a student color the appropriate square on the first graph.
11. Decide, given the current weather conditions, if it would be a good day to fly the planes outside. Why or why not?
12. Color the appropriate square on the second graph.

13. Encourage students to fly their plans on good weather days.

Reflection: At the end of the month, tally the different weather days and the Flying/ No Flying days. Discuss the overall conditions of the month. Discuss implications of flight during inclement weather.

Extension:

-Students can create weather safety posters to display.

-Students can make adjustments to their plane or redesign their plane using different materials to make it "weather ready".

-Ask a pilot to visit your classroom or set up a Skype call with an experienced pilot to discuss flight safety and/or share about tools pilots use to ensure safety.



cloudy



sunny



partly cloudy



rain

WEATHER
CARDS



snow



storm



windy



Winter Sun