

Real-Life Algorithms: Paper Airplanes

Lesson time: 20 Minutes

Basic lesson time includes activity only. Introductory and Wrap-Up suggestions can be used to delve deeper when time allows.

LESSON OVERVIEW

In this lesson, students will relate the concept of algorithms back to everyday real-life activities by making paper airplanes. The goal here is to start building the skills to translate real-world situations to online scenarios and vice versa.

TEACHING SUMMARY

Getting Started - 15 minutes

- 1) [Review](#)
- 2) [Vocabulary](#)
- 3) [What We Do Daily](#)

Activity: Real-Life Algorithms - 20 minutes

- 4) [Real-Life Algorithms](#): Paper Airplanes

Wrap-up - 5 minutes

- 5) [Flash Chat](#) - What did we learn?

Assessment - 10 minutes

- 6) [Daily Algorithms](#)

LESSON OBJECTIVES

Students will:

- Name various activities that make up their day
- Decompose large activities into a series of smaller events
- Arrange sequential events into their logical order

TEACHING GUIDE

MATERIALS, RESOURCES AND PREP

For the Student

- Paper for folding into airplane
- [Real-Life Algorithms Worksheet](#): Paper Airplanes
- Assessment Worksheet: [Daily Algorithms](#)
- Scissors
- Glue

For the Teacher

- [Lesson Video](#)
- Teacher Lesson Guide
- [Real-Life Algorithms Worksheet](#): Paper Airplanes
- Print Assessment Worksheet: [Daily Algorithms](#) for each student

GETTING STARTED (15 MIN)

1) Review

This is a great time to review the last lesson that you went through with your class. We suggest you alternate between asking questions of the whole class and having students talk about their answers in small groups.

Here are some questions that you can ask in review:

- What did we do last time?
- What do you wish we had had a chance to do?
- Did you think of any questions after the lesson that you want to ask?
- What was your favorite part of the last lesson?

LESSON TIP

Finishing the review by asking about the students' favorite things helps to leave a positive impression of the previous exercise, increasing excitement for the activity that you are about to introduce.

2) Vocabulary

This lesson has one vocabulary word that is important to review:

Let's Review:

Algorithm

Say it with me: Al-go-ri-thm

A list of steps that you can follow to finish a task

Algorithm - Say it with me: Al-go-ri-thm

A list of steps that you can follow to finish a task

3) What We Do Daily

- Ask your students what they did to get ready for school this morning.
 - Write their answers on the board.
 - If possible, put numbers next to their responses to indicate the order that they happen.
 - If students give responses out of order, have them help you put them in some kind of logical order.
 - Point out places where order matters and places where it doesn't.
- Introduce students to the idea that it is possible to create algorithms for the things that we do everyday.
 - Give them a couple of examples, such as making breakfast, brushing teeth, and planting a flower.
- Let's try doing this with a new and fun activity, like making paper airplanes!

ACTIVITY: (20 MIN)

4) [Real-Life Algorithm Worksheet](#): Paper Airplanes

LESSON TIP

You know your classroom best. As the teacher, decide if students should do this individually or if students should work in pairs or small groups.

- You can use algorithms to help describe things that people do every day. In this activity, we will create an algorithm to help each other fold a paper airplane.

Directions:

1. Cut out the steps for making a paper airplane [provided worksheet](#).
2. Work together to choose the six correct steps from the nine total options.
3. Glue the six correct steps, in order, onto a separate piece of paper.
4. Trade the finished algorithm with another person or group and let them use it to make their plane!
5. If you are concerned about injury when your students begin flying their paper airplanes, we recommend having them blunt the tip of the plane by either folding it inward or ripping it off and covering the ripped edges with tape.

LESSON TIP

If deciding on the correct steps seems too difficult for your students, do that piece together as a class before you break up into teams.

WRAP-UP (5 MIN)

5) Flash Chat: What did we learn?

- How many of you were able to follow your classmates' algorithms to make your airplanes?
- Did the exercise leave anything out?
 - What would you have added to make the algorithm even better?
 - What if the algorithm had been only one step: "Fold a Paper Airplane"?
 - Would it have been easier or harder?
 - What if it were forty steps?
- What was your favorite part about that activity?

ASSESSMENT (15 MIN)

6) Assessment Worksheet: [Daily Algorithms](#)

- Hand out the worksheet titled "Daily Algorithms" and allow students to complete the activity independently after the instructions have been well explained.
- This should feel familiar, thanks to the previous activities.

EXTENDED LEARNING

Use these activities to enhance student learning. They can be used as outside of class activities or other enrichment.

Go Figure

- Break the class up into teams.
- Have each team come up with several steps that they can think of to complete a task.
- Gather teams back together into one big group and have one team share their steps, without letting anyone know what the activity was that they had chosen.
- Allow the rest of the class to try to guess what activity the algorithm is for.



This curriculum is available under a [Creative Commons License \(CC BY-NC-SA 4.0\)](#)

If you are interested in licensing [Code.org](#) materials for commercial purposes, contact us: <https://code.org/contact>