

TOOLKIT 5 SMALL UAV SAFETY



OKLAHOMA
Aeronautics



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CareerTech

Overview: Students learn about flight safety and etiquette when using small unmanned aerial vehicles, or UAVs.

Source: *Small Unmanned Aerial Vehicle Safety Activity Guide*, NASA

Grade Levels: 6-8

Location: <https://www.nasa.gov/aeroresearch/stem/AAM>

1 Student Activity	2 Lesson Plan or Procedure	3 Activity Evaluation or Rubric	4 Suggested Activities	5 Glossary	6 Teacher Background or Concepts	7 Student Background or Concepts	8 Standards Alignment
x	x		x		x		x

Notes:

- States specific learning objectives addressed.
- Identifies necessary student prerequisite knowledge.
- Includes a materials list.
- Student Activity 3 can serve as an extension activity.

KEY:

1. Student Activity: This is the focus of the toolkit. It is at least one complete activity or lab for students to complete that relates to a topic relevant to aviation/aerospace. It may include related worksheets.
2. Lesson Plan or Procedure: These are the steps or instructions for the teacher to use to deliver the activity.
3. Activity Evaluation or Rubric: The answers to the activity or a rubric or other tool for evaluating students' results.
4. Suggested Activities: These are additional or extension strategies for the teacher that relate to the topic/activity.
5. Glossary: This is a list of the vocabulary terms and their definitions that relate to the activity and/or associated concepts.
6. Teacher Background or Concepts: This is any background information for the teacher that explains key concepts relating to the topic/activity, provides the aerospace context for the activity or otherwise helps prepare the teacher for the topic/activity.
7. Student Background or Concepts: This is any background information for the student about theory and concepts related to the topic/activity. It may be separate handout files or a text section within the larger topic/activity.
8. Standards Alignment: These are education or industry standards that align with the topic/activity.

SUPPLEMENTAL RESOURCES

General Resources

- *Pilot's Handbook of Aeronautical Knowledge*, Federal Aviation Administration, 2016. Free to download at https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/.
- Airport Acronyms and Abbreviations, Federal Aviation Administration, <https://www.faa.gov/airports/resources/acronyms/>
- Find an Airport, Oklahoma Aeronautics Commission, <https://oac.ok.gov/airports>
- K-12 Student/Teacher Resources, NASA, <https://www.nasa.gov/aeroresearch/resources/k-12-resources>
- *Aeronautics Educator Guide*, NASA, <https://www.nasa.gov/stem-ed-resources/aeronautics.html>
- "Science Takes Flight With Paper Airplanes," Edutopia, <https://www.edutopia.org/article/science-takes-flight-paper-airplanes>
- Unmanned Aircraft Systems, Federal Aviation Administration, <https://www.faa.gov/uas/>
- National Agricultural Aviation Association, <https://www.agaviation.org/uavsafety>
- Center for Unmanned Aircraft Systems in Public Safety, <https://www.uaspublicsafety.org/what-is-uas/>

Instructional Practice Resources

- *60 Formative Assessment Strategies*, Natalie Regier, 2012. Free to download at <https://www.okcareertech.org/educators/resource-center/teacher-trainer-tools>.
- *Student Learning That Works: How brain science informs a student learning model*, McREL International, 2018. Free to download at <https://www.mcrel.org/student-learning-that-works-wp/>.

Career Planning Resources

- OK Career Guide. Free to Oklahoma educators. For more information, see <https://www.okcareertech.org/educators/career-and-academic-connections/ok-career-guide>.
- Aviation Organizations, Oklahoma Aeronautics Commission, <https://oac.ok.gov/media-outreach/aviation-organizations>
- *Careers in Aerospace*, American Institute of Aeronautics and Astronautics. Free to download at <https://www.aiaa.org/get-involved/students-educators/Careers-in-Aerospace>.
- Flying for a Career, AOPA, <https://www.aopa.org/training-and-safety/learn-to-fly/flying-for-a-career>
- Oklahoma Aerospace: Building on a Rich Tradition, Oklahoma Department of Career and Technology Education, <https://www.okcareertech.org/business-and-industry/aerospace-and-aviation>

Activity-Specific Resources

- Guide to Effective Poster Design, Argonne National Laboratory, <https://www.anl.gov/education/guide-to-effective-poster-design>
- K-12 curriculum, FAA, <https://www.faa.gov/education/educators/curriculum/k12/>
- "11 Tips For A Creative Poster Design," designhill, <https://www.designhill.com/design-blog/tips-for-a-creative-poster-design/>
- "6 essential elements of graphic design posters," Lucidpress, <https://www.lucidpress.com/blog/6-essential-elements-graphic-design-poster>

A-Z REVIEW

Student Reflection Worksheet

Your Name: _____

Date: _____

Instructions

- Think about what you have learned today.
- Write a word about what you have learned in each letter box. The word does not need to begin with that letter. Try to think of words others haven't used.
- At the end of the time given, you will get points for each word that applies. You will also get points for words no one else has written down.

Note: This activity can be done in groups or individually; your instructor will decide. Your instructor will decide the bonus for the winning individual or team.

A		N	
B		O	
C		P	
D		Q	
E		R	
F		S	
G		T	
H		U	
I		V	
J		W	
K		X	
L		Y	
M		Z	

SAFETY POSTER RUBRIC

	9-10 pts.	7-8 pts.	1-6 pts.	Student Score	Teacher Comments
Title	Title can be read from 6 ft. away and is quite creative.	Title can be read from 4 ft. away and describes the content well.	The title is too small and/or does not describe the content of the poster well.		
Labels	All items of importance are clearly labeled with labels that can be read from at least 3 ft. away.	Several items of importance are clearly labeled with labels that can be read from at least 3 ft. away.	Labels are too small to view OR no important items were labeled.		
Required Elements	Includes all required elements as well as additional information.	All but 1 of the required elements is included.	Several required elements were missing.		
Attractiveness	Exceptionally attractive in terms of design, layout and neatness.	Acceptably attractive though it may be a bit messy.	The poster is distractingly messy or very poorly designed. It is not attractive.		
Use of Class Time	Used time well during each class period. Focused on getting the project done. Never distracted others.	Used some of the time well during each class period. Needed some redirecting and occasionally distracted others.	Did not use class time to focus on the project and/or often distracted others.		
Total Points					50 points possible