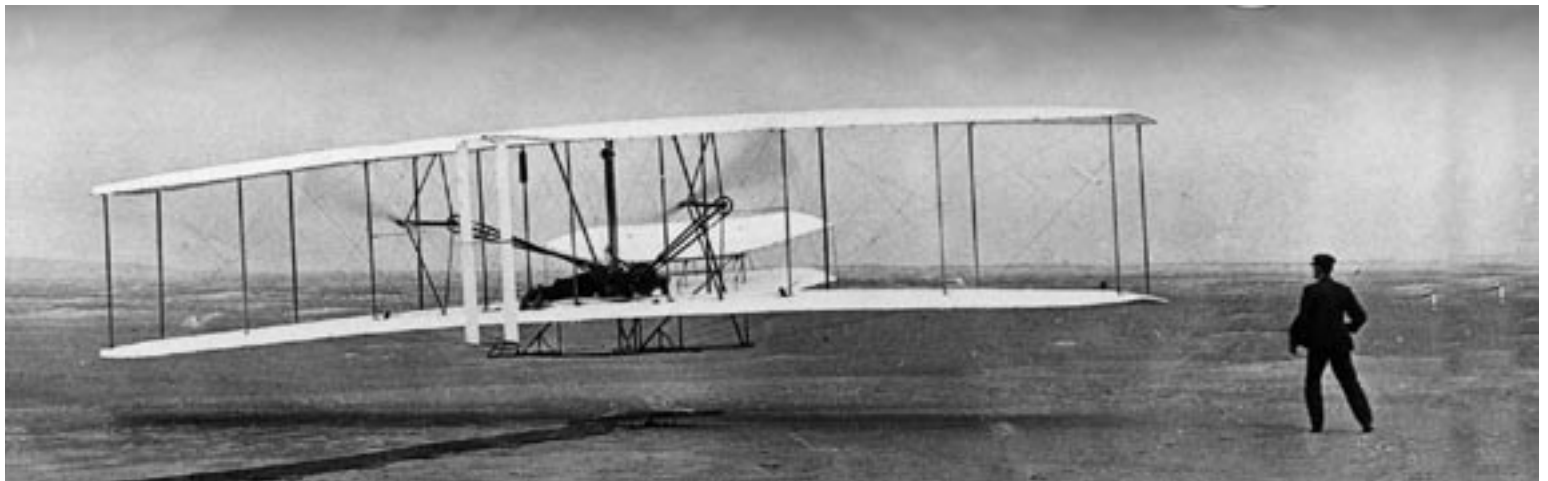


FLY TO THE FUTURE

This activity is from *Fly to the Future* Summer Camp. For more information on how your Challenger Learning Center can obtain a copy of this camp curriculum, contact the Challenger Learning Center of Greater Washington at (703) 837-5640.

To find out how to attend a Challenger Learning Center summer camp, contact your local Learning Center. To find a Learning Center near you, visit www.challenger.org.





The Amazing Race

Grade Level

5 - 7

Activity Type

Problem solving worksheet

Duration

15 minutes

Scheduled Time

Wednesday, Warm-up

Content Overview

In order to travel from one area to another, airplane pilots must understand how to use a variety of navigation equipment. In this activity, campers will determine the cities in which an airplane is supposed to travel. This will teach the campers how to use a compass rose.

Essential Question

How can a location be determined if the only information given is distance and direction?

Objectives

Students will be able to:

- ◇ Use a compass rose.
- ◇ Map an airplane's flight.

Materials

Per camper:

- ◇ United States map
- ◇ Protractor

Preparation & Management

1. Give each camper a copy of the map.
2. If you have the opportunity, you may want to make copies of the compass rose on transparency paper. This will allow students to easily view the cities that may lay under the compass when measuring.

Answer Key

Syracuse
Pittsburgh
Hartford
Raleigh
Atlanta
Orlando
Jackson
Tuskegee
Peoria
Milwaukee
Lexington
Lansing
Columbus



The Amazing Race

Task Card

You will be tracing the path of an airplane.

1. Start in Syracuse.
2. Use the compass rose on the map to find 210° SW.
3. Measure 3 cm in this direction. The 3 cm mark of your ruler should be on a circle that represents a city.
4. In the space next to the directions, write the name of this city.
5. From this city, use the next set of directions and distance to find the name of the next city in the airplane's journey.
6. Repeat steps 4 & 5 for all of the remaining cities.

THE AMAZING RACE

The airplane began its journey in Syracuse. Can you follow the airplane's path?

	<i>map direction</i>	<i>map distance</i>		
From Syracuse go	210° SW	3.0 cm	to	_____ (city)
From this city go	75° NE	4.5 cm	to	_____
From this city go	205° SW	5.9 cm	to	_____
From this city go	240° SW	4.0 cm	to	_____
From this city go	150° SE	4.5 cm	to	_____
From this city go	285° NW	6.7 cm	to	_____
From this city go	90° E	3.0 cm	to	_____
From this city go	335° NW	6.8 cm	to	_____
From this city go	30° NE	2.0 cm	to	_____
From this city go	155° SE	4.4 cm	to	_____
From this city go	345° NW	3.9 cm	to	_____
From this city go	140° SE	2.7 cm	to	_____

BONUS: Approximately how many kilometers are between each of the cities? How many miles?

COMPLETED BY: _____ SIGNATURE: _____ DATE: _____

THE AMAZING RACE

Navigation -Date: _____



COMPLETED BY: _____ SIGNATURE: _____ DATE: _____

Challenger Center Programs



The internationally acclaimed **Challenger Learning Center** Network currently consists of state-of-the-art, innovative educational simulators located at 49 sites across 29 states, Canada, and the United Kingdom. Staffed by master teachers, the core of each Center is a two-room simulator consisting of a space station, complete with communications, medical, life, and computer science equipment, and a mission control room patterned after NASA's Johnson Space Center. See www.challenger.org for information.

A joint initiative of Challenger Center for Space Science Education, the Smithsonian Institution, and NASA, *Voyage — A Journey through our Solar System* is a space science exhibition project that includes permanent placement of a scale model solar system on the National Mall in Washington, DC, and at locations all over the world. See www.voyageonline.org for information.



Space DaySM launches new *Design Challenges* created by Challenger Center each school year. The inquiry-based challenges are designed to inspire students in grades 4-8 to create innovative solutions that could aid future exploration of our solar system. See www.spaceday.org for information.

Challenger Center's *Journey through the Universe* program provides under-served communities with diverse national resources, including K-12 curriculum materials, teacher workshops, classroom visits by scientists from all over the country, and Family Science Nights. See www.challenger.org/journey for information.



The **MESSENGER** spacecraft (MErcury Surface, Space ENvironment, GEOchemistry and Ranging) is to be launched in 2004 and go into Mercurian orbit in 2009. Challenger Center is one of the partner organizations charged with MESSENGER education and public outreach activities. See www.messenger.jhuapl.edu for information.

Through the Challenger Center **Speakers Bureau, Voyages Across the Universe**, staff members speak to student audiences of 30-1,000, conduct workshops for 100-300 educators, give keynote and featured presentations at conferences, as well as conduct Family Science Nights at the National Air and Space Museum, and other facilities across the nation, for audiences of 300-1,000 parents, students, and teachers. See www.challenger.org/speakers for information.

For information about other Challenger Center programs, or to purchase our classroom resources, visit www.challenger.org/store.