

Why teach about the WASPs?

History & Social Studies

- Integrating WASP stories into World War II units.
- Discussing broader themes of gender roles and civil rights.
- Describing advances in aviation.
- Explaining Homefront contributions to the war effort.
- Making connections to the world today.

STEM Education

- Exploring the science and technology of aviation.
- Encouraging interest in aerospace and engineering careers.
- Discovering connections to mathematics with navigation and physics of flight.

Language Arts & Art

- Creative writing assignments based on WASP experiences.
- Projects on wartime propaganda and media representation of women pilots.
- Creating visual art inspired by WASP missions and aircraft.
- Storytime.



TEKS & Standards

Texas Standards: - Grade 2 SS: 2.10B – WASPs as historical figures - Grade 5 SS: 5.5C – Civil rights, women’s rights, and military contributions - Grade 7 SS: 7.7E – WWII and its political, social, economic impact - U.S. History: US.7F – Homefront contributions, women’s roles - World History: WH.23A – Changing roles of women during global conflicts

National History Standards: - Era 8, Standard 3C (Grades 5-12): U.S. mobilization during WWII - Standard 3C (Grades 7-12): Impact of WWII on gender roles and families

National Social Studies Themes: - Theme 2: Time, Continuity, and Change - Theme 8: Science, Technology, and Society

WASP Simulation Activity



YOUR MISSION

Ferry a B-17 Bomber from Floyd Bennet Field in New York to the Naval Station Puget Sound in Seattle, Washington.

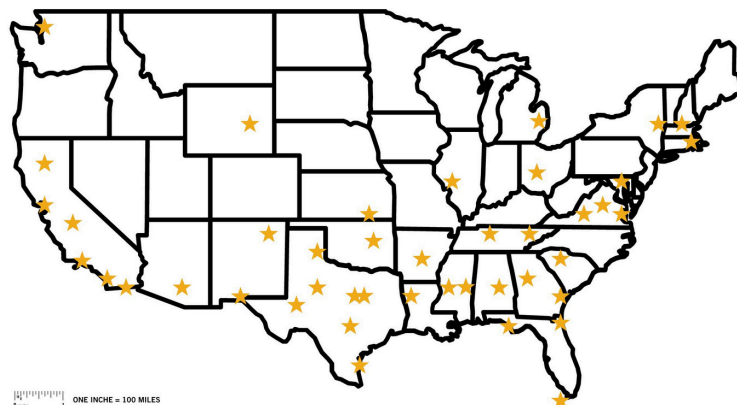
YOUR CHALLENGE

- Navigate your plane across multiple states while tracking fuel and potential complications.

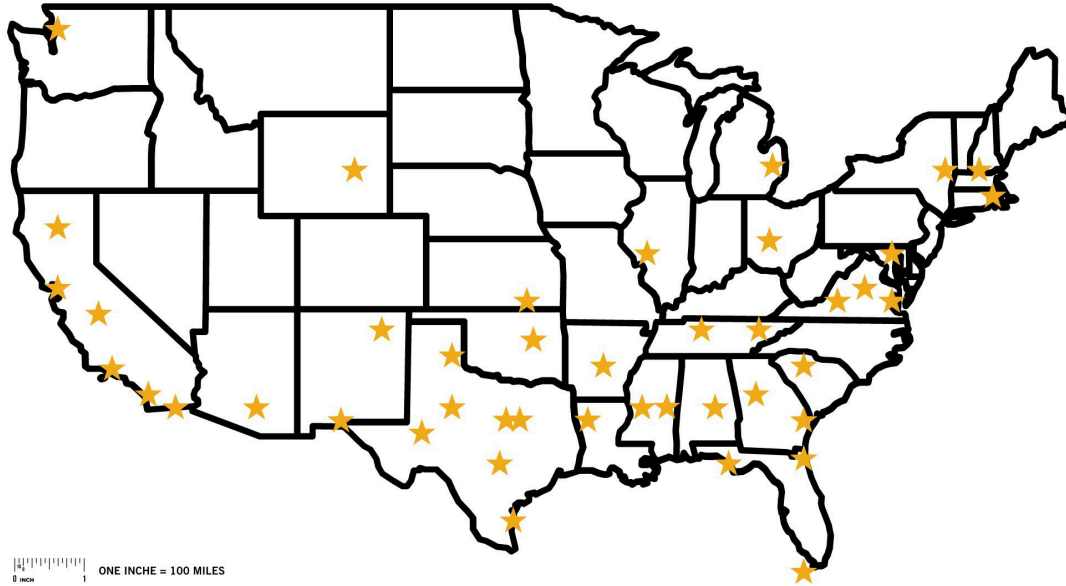
MISSION FACTS

- Cruising speed: 182 miles per hour
- Fuel Consumption: 200 gallons per hour (all 4 engines)
 - That's about .91 miles per gallon
- Fuel capacity: 1,700 gallons (standard internal tanks)

WASP FLIGHT SIMULATOR



WASP FLIGHT SIMULATOR



Step #1: Plan your route & estimate your total distance (1 inch = 100 miles) You can use a string or a ruler.

Step #2: Estimate Flight Time

Formula: Total Miles / Speed in Miles per Hour (MPH)

- Remember: The B-17's cruising speed in 182 miles per hour
- For Example: 13.7 hours x 200 gallons/hour =2,740 gallons (too far without refueling!)

Step #3: Determine Fuel Consumption

Formula: Flight Time x Fuel Consumption = Total Fuel Used

- Remember: The B-17's fuel consumption rate is about 200 gallons per hour
- Remember: The B-17 has a 1,799 gallon capacity
- For Example: 13.7 hours x 200 gallons/hour =2,740 gallons (too far without refueling!)

Step #4: Prepare for Takeoff

Break the trip into 5 legs (approx. 500–800 miles each). Plan refueling when nearing the 1,700-gallon limit.

WASP Simulation Activity

MISSION

First Leg: Measure distance between two destinations

- Estimate flight time
- Estimate fuel consumption

Weather Check: Roll a die and check the conditions. If you rolled a:

1. Clear skies - continue as normal
2. Slightly cloudy - continue as normal
3. Strong winds - reduce speed by 50 mph or increase fuel consumption by 50 gallons
4. Heavy rain - reduce speed or increase fuel consumption by 50 gallons
5. Thunderstorms - Reroute = +100 miles
6. Fog - Reroute = +100 miles

Second Leg: Measure distance between two destinations

- Estimate flight time
- Estimate fuel consumption

Maintenance Check: Roll a die and check the B-17. If you rolled a:

1. Normal operations - continue as normal
2. Minor malfunction - continue as normal
3. Fuel leak - lose 50 gallons of fuel
4. Engine issue - lose 50 gallons of fuel
5. Landing gear malfunction - emergency landing, add two hours to the trip
6. Critical failure - emergency landing, add two hours to the trip

Third to Fifth Leg: Measure distance between two destinations

- Estimate flight time
- Estimate fuel consumption
- Alternate weather & maintenance checks

MISSION DEBRIEF

- What challenges did you face?
- What decisions did you make?
- What would you do differently next time?
- How did math and teamwork help your mission?

EXAMPLE MISSION

Total Distance: New York to Seattle is approximately 2,864 miles. Let's break this into legs of roughly equal distance (before challenges):

Leg One: New York to Chicago

- Distance: 790 miles
- Flight Time: 4.3
- Fuel Used: 860

Leg Two: Chicago to Minneapolis

- Distance: 409 miles
- Flight Time: 2.2
- Fuel Used: 440

Leg Three: Minneapolis to Billings, Montana

- Distance: 840 miles
- Flight Time: 4.6
- Fuel Used: 920

Leg Four: Billings to Spokane, Washington

- Distance: 541 miles
- Flight Time: 3
- Fuel Used: 600

Leg Five: Spokane to Seattle, Washington

- Distance: 279
- Flight Time: 1.5
- Fuel Used: 300

Total Flight Time: 15.6

Total Fuel Used: 3,120

Given the B-17's fuel capacity for 1,700 gallons, students might plan for 1-2 refueling stops:

- After leg 2 in Minneapolis (1,300 gallons used)
- After leg 4 in Spokane (1,520 gallons used since last refuel)

Students would need to factor in potential weather delays or mechanical issues based on dice rolls, which could extend the mission time or require additional stops.