



Forecast Cloudy with a Slight Chance of Showers: The Delay of the D-Day Invasion (1944)

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Grade Level	High School
Duration	2-3 class periods

National Standards

GEOGRAPHY

Element 3: Physical Systems

7. The physical processes that shape the patterns of Earth's surface.

Element 5: Environment and Society

15. How physical systems affect human systems.

Element 6: The Uses of Geography

17. How to apply geography to interpret the past.

AZ Standards

ELA

Reading

Key Ideas and Details

11-12.RI.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

Integration of Knowledge and Ideas

11-12.RH.7 Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in print in order to address a question or solve a problem.

Writing

Text Types and Purposes

11-12.W.1 Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. a. Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences claim(s), counterclaims, reasons, and evidence. b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level, concerns, values, and possible biases. d. Establish and maintain a style and tone appropriate to the norms and conventions of the discipline in which they are writing. e. Provide a concluding statement or section that follows from and supports the argument presented. **Production and Distribution of Writing**

11-12.W.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Arizona Social Science Standards

GEOGRAPHY

Human-environment interactions are essential aspects of human life in all societies.

HS.G2.1 Analyze interactions within and between human and physical systems.

Examining human population and movement helps individuals understand past, present, and future conditions on Earth's surface.

HS.G3.5 Evaluate the impact of social, political, and economic decisions that have caused conflict or promoted cooperation throughout time.

HISTORY

Patterns of social and political interactions have shaped people, places, and events throughout history and continue to shape the modern world.

HS.H4.3 Examine how access to information and technology has been used to influence society.

Research to Build and Present Knowledge

11-12.W.9 Draw evidence from informational texts to support analysis, reflection, and research.

Overview

In deciding what to wear to school or where to travel during summer vacation, weather matters. Students should be able to analyze the importance of how weather affects everyday activities as well as momentous events in history such as D-Day during WWII.

Purpose

In this lesson students will gain a better understanding of how particular weather systems are created, while also analyzing how people make decisions based on the weather. Students will increase their knowledge of the Allied invasion in Normandy, France, by investigating the role that weather played in the decision to invade the European continent.

Teacher Background Information

*Parts of this information can be duplicated as a student reading if the course textbook does not contain enough information on D-Day. **Be sure to not give away the ideal weather conditions (Importance of the Weather and Weather Conditions Present on June 6, 1944) so the lesson proceeds with students learning more and more about what was desired in terms of weather on D-Day.***

Planning Stages

During the Teheran Conference in November of 1943 the planning stages for a cross-Channel invasion of the European continent began. The initial time decided upon was May of 1944. Such a massive operation would require the collaboration of multiple ground, sea, and air troops from the major Allied countries. Prior to December 1943, General Dwight D. Eisenhower was commander of Allied Forces in North Africa and the Mediterranean Sea, but in lieu of the upcoming operation to invade Germany, he was promoted as the Supreme Allied Commander of the European Theatre on January 14, 1944. In the beginning stages of planning "Operation Overlord," D-Day symbolized the day of attack and was given no official date in order to keep the plans top secret.

Reasons for Invasion

Important to the Allied cause in the war was relieving pressure on the eastern front where Joseph Stalin's Soviet troops were fighting to rebuff attacks from Adolf Hitler's Nazi soldiers. A two-front war would force the Germans to spread thin their military units to protect the multiple fronts. Furthermore, attacking Germany from the west would quite possibly alleviate concerns that Stalin would sign a separate peace with Hitler leaving the Americans, British, and other Allied nations to fight a harsh battle over the European continent.

Invasion Facts

Five separate invasion sites were utilized: American troops were to land at two Normandy beaches code named "Utah" and "Omaha," British troops were instructed to land on "Gold" and "Sword" beaches, while the Canadians were responsible for taking "Juno" beach. The invasion force consisted of nine battleships, twenty-three cruisers, one hundred and four destroyers, and seventy-one other large landing crafts, in addition to the use of transports, mine sweepers, and merchantmen amounting to nearly five thousand ships. When attempting to come ashore, the Allied troops faced obstacles and barriers such as concrete structures, land mines, and steel rails entrenched in the sand. Past that, soldiers would have to scale limestone cliffs up to one hundred fifty feet in height while dodging machine gun bullets from German pillboxes.

Importance of the Weather

Before any maneuvering of troops could occur, meteorologists and top military officials at SHAEF (Supreme Headquarters, Allied Expeditionary Force) needed to assess the weather conditions. An invasion by sea could only take place a few days each month, as there would need to be a full moon in order to provide enough light. The level of the tide was just as important; it must be three hours past its ebb in order to provide the right line-of-sight and ability to come ashore for ground troops. The winds must not be too strong in order to prevent heavy casualties during the dropping of paratroopers.

The problem was that weather forecasting was unreliable more than 24 hours in advance, and the

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weather in the English Channel had been characteristically terrible. On the anticipated days of invasion there was a five-foot swell, heavy winds, and a cloud cover. These factors led the Axis powers to assume that no invasion would be possible.

The original recommendation from SHAEF was to invade on June 5, 6, or 7, with the fifth being the most favorable choice. Eisenhower rejected the fifth given that weather reports early on the morning of the fourth indicated that the sky was over cast and the tides were too high for a successful landing. He ordered the ships that had left from the northern English coast to return immediately as a safety measure. This left the sixth or the seventh as the only feasible dates, and if that failed, the Allies would have to wait until the backup dates of June 18, 19, and 20. As fortune would have it, it was decided that the invasion of Europe would commence on the sixth as forecasters foresaw a break in the tumultuous weather. General Eisenhower executed the order with the following words: "I am quite positive we must give the order...I don't like it, but there it is...I don't see how we can do anything else."

Weather Conditions Present June 6, 1944

Captain J.M. Stagg, the SHAEF advisor who met directly with General Eisenhower at least twice daily, was able to suggest that the morning of June 6, would be an appropriate time to launch the D-Day invasion. Stagg concluded from his many reports that a full moon would be present providing good visibility, the skies would be clear or partly cloudy, there would be light winds, and a low tide. The original low-pressure system that had moved eastward on June 4, was forecasted to have a "gap" of good weather caused by a high-pressure trough that was following the rapidly moving cold front associated with the low pressure system. All of these conditions allowed for the best possibility of success in all aspects of the invasion.

Outcome

After two days of holding their position on the beach and suffering severe counterattacks from the Germans, the Allied forces were successful in securing the beach with reinforcements. This sustained effort opened the French coast for an invasion of Nazi Germany from the western front. It is nearly impossible to discount the bravery that the soldiers who stormed the beaches on D-Day exhibited. Likewise, it is absurd to disregard the importance of strategy in planning the invasion in order to save thousands of lives. Knowing and attending to the weather gave the Allied forces the

advantage when seeking to invade a continent dominated almost exclusively by the Axis powers on what history has recorded as "the longest day."

Materials

- Europe Map
- Forecast Cloudy with a Slight Chance of Showers: The Delay of the D-Day Invasion (1944) Student Handout
- Optional—Background Information (minus the ideal weather conditions) and Geographic Considerations for D-Day
- Writing Prompt
- We'll Weather the Weather Whatever the Weather Whether We Like It Or Not: Or Will We? The D-Day Invasion: June 6, 1944 Teacher PowerPoint Lecture
- 8 envelopes
- Weather Cards; Xerox each sheet in a different color, cut apart, and divide into 8 envelopes so each group has a 1 cloud condition, 1 visibility, 1 tide, 1 moon phase, etc. You can sort the cards so one group has perfect conditions for the invasion while the others would have some good and some poor conditions or you can do a random sort.

Objectives

The student will be able to:

1. identify how weather conditions affects human actions.
2. determine how geography influences historical events, specifically war.

Procedures

Prerequisite Skills: Students should have studied the events leading to World War II and have a basic knowledge of the events of the war up to Operation Overlord (1944).

SESSION ONE

1. Anticipatory Set: Have students observe a map of Europe in their textbooks, or on a screen using a document camera or overhead projector. Ask this question: "If you were General Eisenhower, where would you invade the European mainland in order to begin the liberation of the continent?" (*Possible answers might include:* Italy from North Africa, France from Great Britain, France from Spain, Great Britain to Norway to Denmark. Students are

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generally looking at distance instead of what countries were occupied by the Nazis.)

Orally ask the following questions:

1. Why did you select this location?
 2. What advantages does this location provide?
 3. What disadvantages might you face?
2. Distribute *Forecast Cloudy with a Slight Chance of Showers: The Delay of the D-Day Invasion (1944)* Student Handout. Have students read “Overview” and “Background” sections. Discuss what the class considers the best weather conditions for an invasion.
3. Present the power point: *We’ll Weather the Weather Whatever the Weather Whether We Like It Or Not: Or Will We? The D-Day Invasion: June 6, 1944*. Refer back to the location for the invasion that was discussed in the Anticipatory Set with slides 2 and 3. Use slides 4-5 to introduce the idea that the class will become meteorologists helping the Allied forces. Use slides 6-12 to discuss the weather conditions that would come into play for an invasion. Students should take notes on the worksheet pages for phases of the moon, tides, etc.

SESSION TWO

4. Divide students into groups of four. Within each group one student should fill each of the roles: (1) Facilitator--keeps the team on assigned task, (2) Time Keeper--aware of the time spent on each section of the assignment and keeps the group moving, (3) Recorder--writes down the consensus of the group regarding each weather condition (4) Consensus Builder--summarizes the ideas said and helps develop a thorough answer for all. Distribute an envelope containing the Weather Cards to each group.
5. Each group will analyze their 6 cards to determine if today is the right day for an attack. Students will complete the “Analyzing Weather” section of the student handout. Conclude this session by looking at slides 13-17 of primary source documents.

SESSION THREE

6. Begin this session by reading the Secondary and Primary Source Materials from the Met Office (British Meteorological Service). Students should gather in their same groups as Session 2. Have students refer to their worksheets for the weather conditions that their group received. Now complete the Final Decision worksheet.
7. Students share their work in discussion with the class. Use the Geographic Considerations for D-Day handout to bring out additional details on how

geography played a role in planning and conducting the invasion.

8. **Closure:** On a half sheet of paper students respond to the following prompt: **What is the most significant factor that contributed to your decision on whether or not to invade?** Explain your rationale in a well-written paragraph.

Alternate Lesson Plan

SESSION ONE remains the same.

SESSION TWO has the students reading the Secondary and Primary Source Materials from the Met Office (British Meteorological Service) and perhaps the Geographic Considerations for D-Day. Then they are grouped and receive the envelope with weather cards. The group will then complete the Final Decision worksheet based on their cards and the reading information.

Assessment

Students will demonstrate mastery in the following ways:

- Completing the note-taking page after the PowerPoint lecture with 80% accuracy.
- Providing reasonable justification for their choices using information given in the PowerPoint lecture in 5 of the 6 tasks on the worksheet.
- Using 5 to 6 facts in creating the Final Decision.
- Providing a solid justification of which factor was most important in the well-written paragraph. Paragraph can be graded for Ideas and Organization with the 6 Trait Rubric for Writing.

Alternate Assessment: Students could think of another event in history where geography placed an important role in the planning of a battle or an invasion. What geographic considerations would be factors in this battle or invasion?

Extensions

1. As an extension to this lesson students could write a formal letter to General Eisenhower detailing their recommendation for attack and what may happen if he waits too long to make the decision.
2. Students could plan an invasion of Japan as they explore the Allied strategy in the Pacific theatre in consideration of the weather.
3. Students could watch the video produced by the Weather Channel about the invasion (see “Sources”) and compare their analysis to that of Captain J. M. Stagg.

Sources

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<http://geoalliance.asu.edu/azga/>

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