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Construction of the Dam

Extensive planning went into the construction of the Hoover Dam. Selecting a site, resolving conflicts over water rights and raising money were some of issues that needed resolution before the dam could be built. The answers to the following questions can be found by exploring the Construction of the Dam section of the Fact File.

1. Which two states border the Hoover Dam?

2. How long did it take to build the Hoover Dam?

3. What was the Colorado River like before the building of Hoover Dam?

4. List four reasons why the Black Canyon site was chosen to build the dam?

5. Explain how the Colorado River Compact resolved fights over water rights.

6. How did the government both pay back the \$175 million price tag of the dam, and make a profit?

7. Why was Boulder City constructed?

8. Describe how the high-scalers prepared the canyon for construction.

9. How did the workers divert the water to begin construction of the dam?

10. How did the workers prevent uneven cooling in the concrete used to build the dam?

11. How were 4,360,000 cubic yards of concrete lowered during the construction of the dam?

12. How did the majority of the fatalities during construction of the dam occur?

Features of the Dam

The Hoover Dam is considered by many to be one of the greatest engineering feats of all time. The exceptional design of the operational features enabled the accomplishment of a task that many considered impossible. If functionality was not enough, it is also a massive work of art standing proud in the desert. The answers to the following questions can be found by exploring the Features of the Dam section of the Fact File.

1. How do the spillways prevent overflow of the dam onto the power plant below?

2. Describe how the water channeled from the intake towers through the penstock pipes is used to create power.

3. List three cities that benefit from the power produced at Hoover Dam.

4. How does the height of the intake towers prevent silt from entering the power plant?

5. List three ways the penstock and outlet system are used.

6. What do the bronze statues called Winged Figures of the Republic represent?

7. The Hoover Dam is considered by many to be the largest example in the world of what type of architecture?

8. There were about _____ times as many visitors in the year 2000 compared to 1936.

Impact of the Dam

The inconsistency of the Colorado River developed a need for the Hoover Dam. The resulting influence on the Southwest has been varied. The answers to the following questions can be found by exploring the Features of the Dam section of the Fact File.

1. List the five primary reasons that Hoover Dam was built.

2. Name the two dams built downstream from the Hoover Dam.

3. List two benefits of Davis Dam.

4. How much energy was produced at Hoover Dam in its first forty years of commercial power generation?

5. How much oil would have been used in an oil-burning plant to produce this same amount of energy?

6. What happens to the money earned from the sale of hydroelectricity from Hoover Dam?

Tour Guide Training Presentation Planning Sheet

Name: _____

Imagine that you are a Tour Guide Trainer at the Hoover Dam Visitor Center. Your job is to train all of the tour guides employed at the center. You have noticed that the tour guides do not always adequately explain all of the features and history of the dam. To solve this problem you will create a script for the tour guides using presentation software.

Here are some guidelines to follow as you develop your presentation:

1. Write your presentation in a script format and imagine that you are guiding people through Hoover Dam as you develop the text.

2. Be sure to include facts about construction, operational and aesthetic features, political involvement and impact of the dam. Use the Hoover Dam learning node and the following online resources:

<http://www.hooverdam.usbr.gov/educate/kidfacts.html> <http://www.hooverdam.usbr.gov/History/index.htm>

<http://www.pbs.org/wgbh/amex/hoover/timeline/index.html>

<http://xroads.virginia.edu/~1930s/DISPLAY/hoover/modern.html>

<http://redlandsfortnightly.org/hooverdam.htm>

<http://www.lc.usbr.gov/pao/faq.html>

<http://www.hooverdam.usbr.gov/History/powerfaq.html>

<http://hooverdam.lc.usbr.gov/History/essays/compare.html>

3. Use images of Hoover Dam to support your text from the following online resources:

<http://www.clb.com/hooverdamhdtour.html>

<http://www.clb.com/hooverdam.htm>

<http://www.btinternet.com/~andy.chris/Hoover.htm>

<http://community9.webshots.com/album/11255062nvkKJNIGNG>

Tour Guide Training Presentation Evaluation Checklist

Name: _____

The presentation contains:

- o A catchy opening to grab the visitor s attention
- o W riting in a script format
- o A description of the operational features of the dam
- o A description of the aesthetic features of the dam (architecture, sculpture)
- o Information about construction of the dam
- o Political involvement in the building of the dam
- o Images of the dam to support the text
- o Evidence of clear, concrete thought organization
- o W riting revised for clarity, coherence, economy, syntax, and style
- o W riting edited for appropriate mechanics and usage

Resume Writing Planning Sheet

Name: _____

Are you fascinated by anything scientific and have thought about pursuing a science-related career? If so, then this project is for you. There are many science professionals employed at Hoover Dam and around the world. You will research a chosen profession and write a resume that includes the required education and skills. You can pretend that it is your resume and that you have been working in the field for at least 5 years.

Here are some guidelines to follow as you develop your resume:

1. If you are interested in the jobs available at Hoover Dam, visit the Bureau of Reclamation website at:

<http://www.usbr.gov/hr/descriptions/index.html>

2. Use Occupational Outlook Handbook to research any career. You may either use the alphabetical index or the search option.

<http://stats.bls.gov/oco/home.htm>

3. Here are other resources for science-related careers:

http://stats.bls.gov/k12/html/edu_sci.htm

<http://www.geocities.com/CapeCanaveral/Hangar/4707/hs-career.html>

<http://jobstar.org/tools/career/spec-car.cfm#Science>

http://stats.bls.gov/k12/html/tch_sci1.htm

<http://science.uniserve.edu.au/school/resource/careers.html>

4. Here are some online resources for finding educational institutions:

<http://www.colleges.com/?source=Overture>

<http://www.colleges-degrees-searches-online.org/>

5. Use the resume writing guides online at:

<http://www.nau.edu/CAREER/students/internships/theresume.htm>

<http://www.east.asu.edu/sta/career/resumeWriting.pdf>

6. Perform independent research to find organizations that would employ individuals with the chosen career for the experience section of your resume.

Resume Writing Evaluation Checklist

Name: _____

The resume contains:

- ☐ Resume format
- ☐ A heading
- ☐ A career objective
- ☐ An education section
- ☐ A job experience section that reflects at least 5 years of work
- ☐ A job-related skills section
- ☐ Evidence of research about the chosen career
- ☐ Evidence of clear, concrete thought organization
- ☐ Writing revised for clarity, coherence, economy, syntax, and style
- ☐ Writing edited for appropriate mechanics and usage

Hydropower Animation Storyboard Planning Sheet

Name: _____

Do you like to draw animations? If so then this project is for you. Imagine that you have been hired by an educational video company to produce a cartoon about hydropower as a renewable energy source. One of the first steps is to create a storyboard, which shows how a story will flow and ensure that no vital information is left out during the development process. You will research hydropower using the Hoover Dam learning node and additional resources to develop your storyboard.

Here are some guidelines to follow as you develop your storyboard:

- 1 Use the following online resources to learn more about hydropower:

<http://www.wvic.com/hydro-works.htm>

<http://hydropower.inel.gov/>

<http://www.howstuffworks.com/hydropower-plant.htm>

<http://internet.humboldt.k12.ca.us/osprey/environment/energy/image1.html>

- 2 There are many options for your final product. Here are just a few of ideas:

Hand-draw your pictures on a sheets of butcher paper and attach your typed text below.

Scan your hand-drawn images, add your text and use them to create a presentation.

Draw each picture on a separate sheet of paper and add your typed text.

Draw your images on the computer, add your typed text and use them to create a presentation.

- 3 Use the storyboard organization worksheet on the next page to assist you in your planning, then write your script and complete your drawings.

Storyboard Organization Worksheet

Name: _____

Use the area below to plan the sequence of your animation and the main ideas covered. Use as many sheets as necessary for your planning.



Thumbnail sketch

Main idea



Thumbnail sketch

Main idea



Thumbnail sketch

Main idea



Thumbnail sketch

Main idea



Thumbnail sketch

Main idea



Thumbnail sketch

Main idea



Thumbnail sketch

Main idea



Thumbnail sketch

Main idea



Thumbnail sketch

Main idea



Thumbnail sketch

Main idea



Thumbnail sketch

Main idea



Thumbnail sketch

Main idea

Hydropower Animation Storyboard Evaluation Checklist

Name: _____

The storyboard contains:

- o A script explaining hydropower to children
- o A chronological sequence
- o Typewritten text
- o Hand or computer drawn pictures to support the text (may be color or black-and-white)
- o Use of the Hoover Dam as an example of hydropower
- o Evidence of research on hydropower
- o An explanation of the hydrologic cycle
- o An explanation of renewable energy sources
- o Evidence of clear, concrete thought organization
- o Writing revised for clarity, coherence, economy, syntax, and style
- o Writing edited for appropriate mechanics and usage

Who Am I? Planning Sheet

Name: _____

The Hoover Dam generates about 4 billion kilowatt-hours of energy annually used to power the Southwest. The electricity supplied to our homes, schools, businesses and industries is generally alternating current or (AC) power. Imagine that a local newspaper is offering a contest called Who Am I? designed for high school students. The newspaper article reads:

Do you know who invented the form of electricity called alternating current (AC) that powers our homes, schools and businesses? This electric magician, unknown for his accomplishments when he was alive, remains obscure from much of the public to this day. Before his invention, direct current (DC) was the primary form of energy. Your job is to discover the name of this genius, research his life and compare (AC) and (DC) power to develop and understanding of the magnitude of his invention. You will then pretend that you are this marvelous inventor and write an autobiography of his life and the reason for his invention. Use books, the Internet and any other resources for your research.

Here are a couple of hints about the inventor to start you on the right track:

He was born in Croatia.

He died in 1943.

Good luck!

Who Am I?

Evaluation Checklist

Name: _____

The autobiography contains:

- o Writing presented in the point of view of the inventor
- o The name of the inventor
- o A catchy opening to grab the reader's attention
- o An overview of the inventor's life
- o A comparison of AC and DC power
- o Diagrams or pictures (if appropriate) to support the text
- o An explanation for reasons the inventor developed AC power
- o Evidence of research on AC and DC power
- o Evidence of clear, concrete thought organization
- o Writing revised for clarity, coherence, economy, syntax, and style
- o Writing edited for appropriate mechanics and usage

Two Sides of the Issue Planning Sheet

Name: _____

Do you like to debate issues? If so, then this project is for you. Imagine that the Bureau of Reclamation, a pro-dam organization, and the International Rivers Network who are against dams are having a debate about the impact of dams. You will research both sides and develop two debates: one for dams, and one against dams. Use the Hoover Dam learning node, the Internet and other resources to evaluate the impact of dams.

Here are some guidelines to follow as you develop your debates:

- 1 Use the mission of the Bureau of Reclamation to shape your pro-argument:

<http://www.hooverdam.usbr.gov/>

- 2 Use the mission of the International Rivers Network to shape your against-argument:

<http://www.im.org/index.asp?id=/basics/about.html>

- 3 Here are some online resources to get you started in your research of the impact of dams:

<http://www.seaweb.org/background/book/dams.html>

<http://www.bluefish.org/wrldbank.htm>

<http://www.nationalgeographic.com/resources/ngo/education/geoguide/dams/>

<http://www.idsnet.org/Resources/Dams/Development/impact-enviro.html>

<http://www.fwee.org/hpar.html>

<http://www2.privatei.com/~uscold/>

<http://www.simsience.org/cracks/advanced/dams2.html>

<http://www.sunsetcities.com/hoover-dam.html>

<http://www.pbs.org/wgbh/amex/hoover/sfeature/damdivided.html>

- 4 Write each debate using a word processing program and provide examples from your research to support each side of the issue.

Two Sides of the Issue Evaluation Checklist

Name: _____

The project contains:

- o A debate for dams that reflects the mission of the Bureau of Reclamation
- o A debate against dams that reflects the mission of the International Rivers Network
- o Description of possible environmental impacts (positive and negative)
- o Explanation of the power generation associated with dams
- o Explanation of impacts downstream, midstream and upstream of the river
- o Debates typed in a word processing program
- o Evidence of clear, concrete thought organization
- o Writing revised for clarity, coherence, economy, syntax, and style
- o Writing edited for appropriate mechanics and usage

My Water Use Planning Sheet

Name: _____

Water is a vital resource necessary for our survival. Have you ever thought about what would happen if we ran out of water? Why would we run out of water? In this project you will evaluate your water use as it compares to water conservation efforts. You will then make at least three changes in the way you use water and write a report outlining your experience. Research the causes and effects surrounding water conservation issues and use presentation software to create your report.

Here are some guidelines to follow as you develop your report:

1. As you tour the water saver home website, start thinking about how you use water in each part of your home.

<http://www.h2ouse.org/>

2. Use the following online resources to discover water-saving tips

<http://www.americanwater.com/49ways.htm>

<http://www.ci.phoenix.az.us/WATER/wtrcare.html>

<http://www.wateruseitwisely.com/>

<http://www.waterinfo.org/indcnsvr.html>

3. Research independently the causes and effects surrounding water conservation issues using the Internet or library.

4. Make at least three changes to your current water use.

5. Develop your report outlining your current use of water, recommendations for water conservation for each part of a house, causes and effects of water conservation issues and describe your experience of water conservation in practice.

My Water Use Evaluation Checklist

Name: _____

The presentation contains:

- o A description of your current water use in each part of your home
- o Recommendations for water conservation in each part of the home
- o Description of at least three changes you made in your water use
- o Evidence of research about water conservation
- o Evidence of research of possible causes and effects surrounding water conservation issues
- o Presentation with supporting graphics
- o Evidence of clear, concrete thought organization
- o Writing revised for clarity, coherence, economy, syntax, and style
- o Writing edited for appropriate mechanics and usage



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