

Using Information Resources

In this test, you are asked to look at some reference materials and then use the materials to answer some questions.

Research Topic: Volcanoes

Suppose you were assigned to write a report on volcanoes. You need to find out various aspects of volcanoes. Six different sources of information about volcanoes are contained in this section of the test. The information sources are listed below.

Skim all of the resources to become familiar with the information they contain. Remember that these are reference sources, so you should not read every word in each source. Once you have skimmed these sources, answer the questions that follow.

Use the information sources to help you answer the questions. As you work through the questions, go back and read the sections that will give you the information you need.

- 1. Internet Search Results from “GoFind”**
- 2. Magazine Article**
- 3. Excerpt from an “Emergency Preparation Handbook”**
- 4. Excerpt from a Book, *All about Volcanoes***
- 5. Glossary from a Book, *All about Volcanoes***
- 6. Encyclopedia Entry**

1. Internet Search Results from “GoFind”

GoFind.org

Search for: “volcanoes”

Number of matches: 22,136

Learner.Org—Interactive Volcano Exhibit

Visit this site to learn everything there is to know about volcanoes, how they are formed, the stages of volcanoes, and more.

<http://www.learner.org/exhibits/volcanoes/>

Scholastic.com—Answers to Kids’ Questions About: General Facts about Volcanoes

Dr. Stanley Williams, volcanologist, answers questions about volcanoes. What gases come out of volcanoes? What rocks are made by volcanoes? How many volcanoes are in the world?

<http://www.learner.org/exhibits/volcanoes/>

NASA Facts Online—Volcanoes and Global Cooling

This site has information about whether volcanoes can change the Earth’s weather.

http://pao.gsfc.nasa.gov/gsfcservice/gallery/fact_sheets/earthsci/volcano.htm

KidsCrafts.org—Make a Volcano

Here are step-by-step instructions for making your very own volcano. This is an excellent science project!

<http://www.kidscrafts.org/science/volcano.html>

Fire on the Mountain: Volcano Power Page

D.K. Busia takes you inside a volcano on an amazing virtual tour. Don’t miss the picture gallery of the world’s hot spots! This site also has fun facts about volcanoes, volcano statistics, and a map of the world that shows all active volcanoes.

<http://www.dkbusia.com/fireondamountain/volcanopower.htm>

Geological Encyclopedia: Volcanoes

This site gives a thorough explanation of volcanoes, volcanic activity, the Volcanic Explosivity Index, active and inactive volcanoes, and more.

<http://geoencyclopedia.net/volcanoes/liquidrock.htm>

Next 6 matches

Matches: 1 2 3 4 5 6 7 **MORE**

New Search:

Search Hints

2. Volcano Fact Index

Volcano Fact Index

Largest active volcano: Mauna Loa, Hawaii, USA (62 miles in diameter)

Largest volcanic explosion: Crater Lake, Oregon, USA (7 on the Volcanic Explosivity Index)

Highest active volcano: Llullaillaco, Chile (over 22,000 feet)

Highest temperature of a volcano: Up to 1350 degrees Celsius

Most active volcano: Kilauea, Hawaii, USA, active since 1983

Number of active volcanoes in the USA (excluding Alaska): 40

Number of active volcanoes in Alaska: 60

Number of active volcanoes in the world (on land): approximately 1,300

Number of volcanoes undersea (active and dormant): approximately 10,000

Number of volcanoes that erupt in a given year: 20-30

Number of volcanoes on Mars: 18

Number of people living near active volcanoes: approximately 500 million

Average depth of a volcano crater: the length of a football field, or about 100 yards

3. Excerpt from an “Emergency Preparation Handbook”

Emergency Preparedness

Natural Disasters—Volcanoes

PREPARING FOR A VOLCANIC ERUPTION

COMMUNITY WARNING SYSTEMS

Before any emergency, including volcanic eruptions, make sure you know how the city broadcasts community warnings. Often these warnings are broadcast on television and radio stations. In some cases, emergency workers go door-to-door in neighborhoods that are in danger.

FAMILY PLANS

Every family should have a plan worked out in order to know how to reach each other in an emergency. A real danger of a volcanic eruption (or any other kind of natural disaster) is that family members may be apart when the disaster happens. Family members need to have a plan to get back together. A friend or relative who lives out of the area may be your emergency contact. All family members should telephone this person in an emergency.

SUPPLIES

Everyone should have these supplies ready and available:

- Flashlight
- Radio
- Batteries
- First aid kit
- Packaged food
- Bottled water
- Can opener
- Prescription medicines
- Boots or heavy shoes

In the case of a volcanic eruption, you may also need:

- Dust mask or goggles to keep ashes and dust out of the eyes
- Disposable breathing mask

ESCAPE ROUTE

If you live in an area that is close to the volcano, you need to have a plan for an escape route. Plan how you would leave your neighborhood. Be sure to have a backup plan in case your first choice route is blocked.

ADDITIONAL PREPARATIONS

Volcanic eruptions sometimes cause or appear with other disasters. You should also be prepared for:

- Mudslides
- Flash floods
- Earthquakes
- Ash fall and acid rain
- Tsunamis (tidal waves)

4. Excerpt from a Book, *All about Volcanoes*

You might think of volcanoes as tall mountains that erupt. Some volcanoes do look like mountains. They are tall and cone-shaped. These are cinder volcanoes and composite volcanoes. Some volcanoes, shield volcanoes, are shaped like hills. Shield volcanoes have sides that slope gently, instead of the steep sides of cinder or composite volcanoes. Some volcanoes are flat because they are just places on the surface of the earth that have split open. These flat volcanoes are fissure volcanoes.

What is a volcano? You might say that, in its most basic form, a volcano is some kind of opening on the outside layer of the earth, or the earth's crust. The earth's crust covers the mantle. The earth's mantle is made of melted rock. It is extremely hot. The melted, liquid rock is called magma. The magma of the earth's mantle is covered by the earth's crust.

Sometimes the hot magma is pushed up through the earth's crust. The magma pours out of a volcano. This outpouring or release of magma is called an eruption. When magma pours out of a volcano, it is called lava. Lava can be thick or thin liquid. Lava is extremely hot. The lava that pours out when a volcano erupts can be as hot as 2,000 degrees Fahrenheit.

When lava hardens, it can become pumice, a stone that is rough and light, with a texture like a sponge. Lava can look like pillows when it hardens if the lava is released underwater. The water surrounds the hot lava and cools it very quickly, giving it a smooth surface. Lava can harden to be shiny, like glass. Volcanoes also send out ash and gases. The ash is made of crushed hardened lava. The gases are hot and poisonous. Bits of rock, called debris, also come out of the volcano.

5. Glossary from a Book, *All about Volcanoes*

Glossary

acid rain: rain that has acid-forming chemicals that may be dangerous to people and/or harmful to the environment

ash: fine powder of crushed lava from a volcanic eruption

cinders: bits of hardened lava

crater: the inside of the volcano or geyser

debris: loose pieces of broken rocks

eruption: the release of steam or molten rock from a geyser or a volcano

fumarole: a hole on or near a volcano that sends out steam or vapor

geothermal: related to heat from the earth

geyser: a natural hot spring that sends up jets of hot water and steam

hot spring: a water source heated by nearby molten rock

lapilli: pebbles sent out by a volcano in an eruption

lava: melted, liquid rock that comes out of a volcano; also the rock that forms when melted lava cools and becomes solid

magma: hot, melted matter under the earth's surface

molten: melted

pahoehoe lava: fast-moving liquid lava that hardens to form a smooth surface

pillow lava: lava that has lumps shaped like pillows, formed when lava erupted into the ocean and the lava cooled rapidly

pumice: a lightweight stone with a spongelike texture that forms from lava that has gas bubbles

sulfur: gas that may be released in a volcanic eruption

summit: the highest part of a volcano

volcano: a hole, split, or vent in the crust of the earth that sends out steam, vapor, lava, gases, or ashes

volcanologist: a scientist who studies volcanoes

6. Encyclopedia Entry

Three Phases of a Volcano

1. **ACTIVE**—Active volcanoes have had recent eruptions. There are signs that show that the volcano may erupt again.
2. **DORMANT**—Dormant volcanoes have not erupted for many years. There are no signs that dormant volcanoes will erupt soon, but it is possible for dormant volcanoes to become active and begin erupting.
3. **EXTINCT**—Extinct volcanoes no longer erupt.

TYPES OF VOLCANOES

There are four kinds of volcanoes:

1. cinder volcano
2. shield volcano
3. fissure volcano
4. composite volcano

	CINDER VOLCANO	SHIELD VOLCANO	FISSURE VOLCANO	COMPOSITE VOLCANO
This volcano is made of:	layers of ash	sheets of hardened lava	earth's crust	layers of ash and lava
This volcano is shaped like:	a cone	a dome	a crack in the earth	cone
How many holes or vents does this volcano have?	one main vent that may split off (like tree branches)	one hole or vent	may have many vents	one main vent; may have side vents (like cinder volcano)

6. Encyclopedia Article (continued)

TYPES OF LAVA

1. aa lava
2. pahoehoe lava
3. pillow lava

	AA LAVA	PAHOEHOE LAVA	PILLOW LAVA
What does this lava look like after it cools?	sharp and rocky	rope	round rocks that look like pillows
Why?	It is thick and sticks to things. When it cools, it hardens into sharp rock.	It is a thin liquid that pours out fast.	It pours into the ocean. The water cools it very quickly.

Lesson 1

Using Information Resources: Volcanoes

1. Which Web site should you visit to find out how a volcano on the other side of the world might influence you in Louisiana?
 - A. Learner.org: Interactive Volcano Exhibit
 - B. NASA Facts Online: Volcanoes and Global Cooling
 - C. Fire on the Mountain: Volcano Power Page
 - D. Geological Encyclopedia: Volcanoes

2. Which Web site has an activity you could do?
 - A. Learner.org: Interactive Volcano Exhibit
 - B. NASA Facts Online: Volcanoes and Global Cooling
 - C. KidsCrafts.org: Make a Volcano
 - D. Fire on the Mountain: Volcano Power Page

Lesson 2

Using Information Resources: Volcanoes

1. Which search terms should you use to find sites with more information on the same topic as the NASA site on the results of the Internet key word search?
 - A. “volcanoes” and “weather”
 - B. “NASA” and “science”
 - C. “facts” and “volcanoes”
 - D. “global warming” and “NASA”

2. Which source gives the name of the highest active volcano?
 - A. the book excerpt
 - B. the encyclopedia entry
 - C. the glossary
 - D. the fact index

Lesson 3

Using Information Resources: Volcanoes

1. Which is the **best** source for general information about volcanoes?
 - A. the search engine results
 - B. the book excerpt
 - C. the emergency preparation handbook
 - D. the glossary

2. If you wanted to write a report on lava, which information from *All About Volcanoes* would be the **most** helpful?
 - A. the different kinds of volcanoes
 - B. the shapes that volcanoes can take
 - C. the definition of pumice
 - D. the definition of debris

Lesson 4

Using Information Resources: Volcanoes

1. What is a fissure volcano made of?

- A. layers of ash
- B. sheets of hardened lava
- C. earth's crust
- D. layers of ash and lava

2. Which volcano is flat?

- A. cinder volcano
- B. composite volcano
- C. fissure volcano
- D. shield volcano

Lesson 5

Using Information Resources: Volcanoes

1. Which **two** sources should you use for information about pahoehoe lava?

2. Which kind of lava is thick and becomes sharp when it hardens?

3. How many active volcanoes are there in Alaska?

Using Information Resources

In this test, you are asked to look at some reference materials and then use the materials to answer some questions.

Research Topic: Transportation

Suppose you were assigned to write a report on transportation. You need to find out various aspects of transportation. Seven different sources of information about transportation are contained in this section of the test. The information sources are listed below.

Skim all of the resources to become familiar with the information they contain. Remember that these are references sources, so you should not read every word in each source. Once you have skimmed these sources, answer the questions that follow.


Use the information sources to help you answer the questions. As you work through the questions, go back and read the sections that will give you the information you need.

- 1. Internet Web Site Information from WideSky.com**
- 2. Table of Contents**
- 3. Transportation Timeline**
- 4. Letter to the Editor**
- 5. Glossary**
- 6. Airplane Speed through the Years (1901–1969)**
- 7. Excerpt from *The Encyclopedia of Transportation***

1. Internet Web Site Information from WideSky.com



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News, facts, and history of air travel


AMERICAN HISTORY **AMERICAN HISTORY**

SEAPLANES You may have heard of the Wright Brothers, but did you know they started out as bicycle mechanics? Orville and Wilbur Wright had transportation in their blood. They owned a bicycle shop in Dayton, Ohio, but they loved flying, be it kites, gliders, or even just watching birds.

ULTRALIGHTS

SUPERSONICS They flew many homemade gliders and eventually decided to try adding an engine. Their first powered flight ended in a crash landing after only three seconds in the air.

INTO THE FUTURE Modifications were made, and they tried again. Orville Wright flew for twelve seconds, making this flight the first successful powered flight in history. Since that day in 1903, many others have worked very hard to make advancements in powered air travel, resulting in modern jets and space shuttles.



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SEA PLANES

Planes can land anywhere, even in water. Only special planes can land in water and still be able to fly, however. Seaplanes have floats, or pontoons, that allow them to land and to launch from lakes and other calm bodies of water. Water landings allow rescue workers to get to people in emergencies on the water much faster than a boat could get there.

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1. Internet Web Site Information from WideSky.com (continued)

ULTRALIGHTS

Ever think about how nice it would be to have your own private, portable plane? Ultralights are very small. At only 200 pounds, they weigh less than many motorcycles. An ultralight has a very small engine that is about as powerful as a lawnmower. The wings are large and much like the wings of a hang glider. There is a small cockpit that sits on three wheels. The cockpit is in the center, below the wings.



Ultralights are used for many different things. Archeologists and scientists use them to view digging sites from the air. Ultralights have also been used to help migrating geese who have gotten lost! People train the lost geese to follow the tiny planes and pilots lead the geese back to the migration route.

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SUPERSONICS

Pilots used to think it would be impossible to break the sound barrier. Breaking the sound barrier is traveling at supersonic speeds. When the sound barrier is broken, you hear a sonic boom, which sounds like a very loud thunderclap. At sea level, the speed of sound is about 750 miles per hour.

There is one passenger plane, the Concorde, which flies at 1,350 miles per hour, well above the speed of sound. The Concorde is not the only plane to travel faster than the speed of sound. A spy plane, the SR-71 Blackbird, cruises at mach 3. The word "mach" means the speed of sound, so mach 3 is three times that speed!



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INTO THE FUTURE

Just when we think air travel cannot get any better, more improvements are made. NASA (National Aeronautics and Space Administration) is working on a plane that would be able to travel around the entire world in only a few hours. Flying in this plane would mean traveling at about 18,000 miles per hour, or mach 24. Another new advancement is a plane that takes off vertically, like helicopters do, but without using rotating blades. This means that there will be more planes that don't need a runway.



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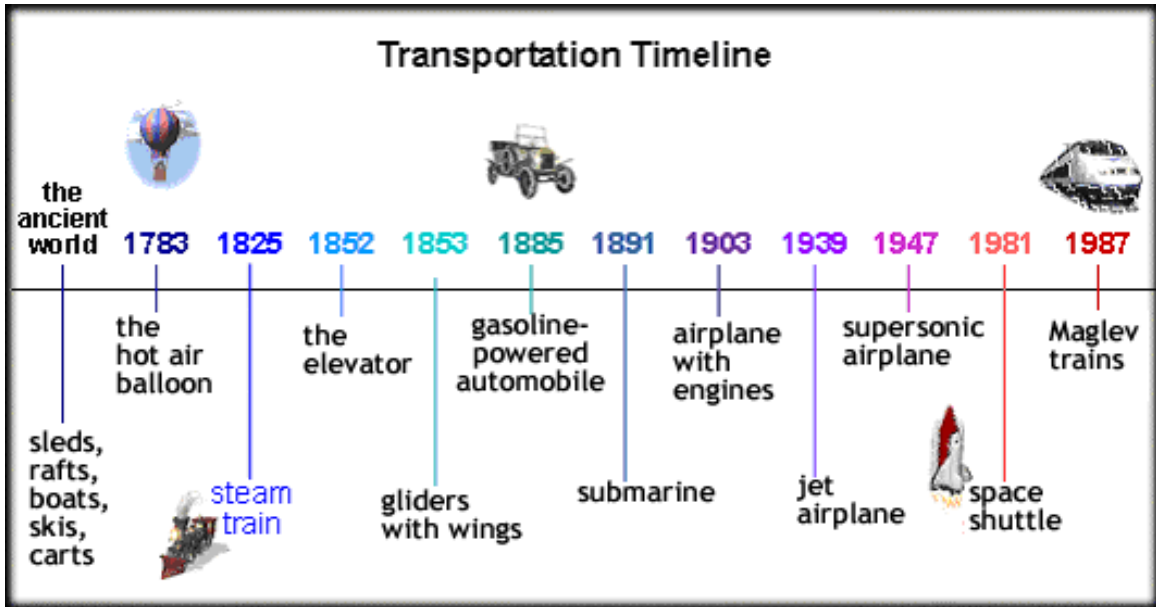
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3. Transportation Timeline



4. Letter to the Editor

The Grenville Gazette
P.O. Box 212
Grenville, Louisiana, 71118

August 13, 2002

Dear Editor:

I am writing to respond to both the headlines of last week (“Daily Gridlock—No Easy Solutions, Say City Council”) and your editorial (“The Great Wide Way”).

The city council says there are no easy solutions to the traffic problems, but I believe there are many other possible answers. Your editorial says that widening the main highway is the best solution, but I disagree. Widening the main highway is not the only answer. Widening the highway will only mean more traffic, not less. Wider highways will only mean more cars on the road.

Why is no one considering the obvious answers?

What about:

- ride sharing?
- using car pools?
- taking the train?
- taking the bus?
- bicycling?
- walking?

I hope everyone will think about using another way to get to work. Leave your car at home, get some exercise, and help stop pollution! If we all took one less car trip a week, gridlock would become a thing of the past.

Sincerely,

Clevan Williams

5. Glossary

Glossary

aerodynamic: designed to move easily through air and water

Air Cushion Vehicle (ACV): a vehicle that is supported aboveground by a layer of air

air pollution: harmful chemicals and other emissions that are produced by vehicles and manufacturing factories and are released into the air

axle: the bar that runs underneath a vehicle, connecting the wheels on opposite sides.

beacon: a signal to warn or guide travelers

catapult: a device for launching a plane from the deck of an aircraft carrier.

cockpit: the place on an airplane where all the controls are located and where the pilot uses is seated

drag: forces that slow objects down as they move through air or water

friction: the force that slows object down when they rub against each other

fuselage: the main body of an airplane

helium: a very stable gas that is lighter than air; used to inflate blimps

lift: upward force produced by wings and propeller that causes objects to rise

supersonic: faster than the speed of sound.

6. Airplane Speed through the Years, 1901–1969

Airplane Speed through the Years, 1901–1969

Year	Airplane	Cruising Speed
1901	Wright Biplane	34 mph
1933	Boeing 247 (propeller)	189 mph
1940	Boeing 307 (propeller)	220 mph
1950	Douglas DC6 (propeller)	280 mph
1955	Douglas DC7 (propeller)	335 mph
1957	Boeing 707 (jet)	600 mph
1969	Concorde (supersonic jet)	1,350 mph

7. Excerpt from *The Encyclopedia of Transportation*

High-speed Rail Transportation, *continued*

Transporting People and Goods

Although the design, efficiency, and speeds of trains vary, all trains have one thing in common: they have revolutionized transportation and have had a lasting impact on the world's industry and civilization. With the introduction of the steam train in 1825, trains became an essential method of transporting people and goods, such as fruits, vegetables, cattle, and other products.

Traveling at Increased Speeds

Over the years, trains have become faster and more efficient. In 1930, the steam train could travel at 125 miles per hour. Twenty years later, the diesel train traveled at 130 miles per hour. In the late 1960s, the Japanese bullet trains of Japan reached a speed of 225 miles per hour. Speeds kept increasing; ten years after the bullet train's achievement, the German Ice Train's highest recorded speed was 250 miles per hour. The most recent advancement in speed is the TGV, *Train à Grande Vitesse* or "High-Speed Train", located in France. The TGV has a maximum speed of 320 miles per hour, a speed that nearly meets the cruising speed of some jet airplanes.

Due to the unusually high speeds of trains like the TGV, there are special modifications to their cars and tracks that are necessary in order to keep these trains safe. The TGV has a "skirt" as part of its design. The skirt prevents the train from rising off the track when traveling at high speeds.

High-speed trains demand different tracks from slower trains. Tracks for high-speed trains must be smooth and have few joints. A small bump in a track makes little difference when traveling at low speeds. At high speeds, a misplaced joint or a bump in a track could possibly force a train off the track. For this reason, the rails of high-speed trains are built using longer segments. This allows for the use of fewer joints. Another consideration for high-speed trains is that the tracks must take a straighter course than the tracks of slow-moving trains. Swerving tracks mean slower speeds. The smoother and straighter the tracks, the faster the trains are able to travel.

Long-Distance Train Travel

With the rapidly increasing speeds of trains such as the TGV, long-distance travel on trains may become more attractive for travelers than airplane travel. Unlike airports, which are generally located outside city limits, train stations are located in the hearts of cities. The convenient location of train stations means less travel time altogether.

7. Excerpt from *The Encyclopedia of Transportation* (continued)

High-speed Rail Transportation, *continued*

The Future of Trains

The most recent advances in train technology have produced a new type of train called a Maglev. The name *Maglev* was coined from a combination of the words “magnet” and “levitation.”

The powerful forces of magnets are used to keep these trains above the tracks. This all but eliminates friction, allowing the Maglev to travel much faster than other trains. Most trains use wheels that roll on a track. The rubbing of the wheels against the track causes friction, which slows the speed of the trains. The wheels of the Maglev barely touch the track. It is predicted that in the future Super-Maglevs may be able to travel up to thousands of miles per hour.

Related Articles:

History of the Union Pacific Railway—p. 846

Monorail—p. 335

Steam engine—p. 197

Subways and subterranean railways—p. 765

Lesson 6

Using Information Resources: Transportation

1. Which is the **best** source for learning about how people traveled long ago?
 - A. table of contents
 - B. glossary
 - C. widesky.com
 - D. transportation timeline

2. Under which heading of widesky.com would you learn about who invented the airplane?
 - A. American History
 - B. Seaplanes
 - C. Supersonics
 - D. Into the Future

Lesson 7

Using Information Resources: Transportation

1. According to widesky.com, a plane of the future might
 - A. land on and take off from water.
 - B. weigh less than many motorcycles.
 - C. travel faster than the speed of sound.
 - D. fly around the world in a few hours.

2. According to the Transportation Timeline, the steam train was invented in
 - A. 1783.
 - B. 1825.
 - C. 1885.
 - D. 1987.

Lesson 8

Using Information Resources: Transportation

1. According to the transportation timeline, which was invented first?
 - A. Maglev trains
 - B. submarines
 - C. automobiles
 - D. elevators

2. The letter to the editor appears in the
 - A. widesky Web site.
 - B. “Great Wide Way.”
 - C. *Grenville Gazette*.
 - D. *Encyclopedia of Transportation*.

Lesson 9

Using Information Resources: Transportation

1. Which source would be the **best** place to find the difference between a fuselage and a cockpit?
 - A. the table of contents
 - B. the glossary
 - C. the Transportation Timeline
 - D. the letter to the editor

2. According to “Airplane Speed through the Years,” which airplane has a cruising speed of 280 mph?
 - A. Boeing 247
 - B. Douglas DC6
 - C. Boeing 707
 - D. Concorde

Lesson 10

Using Information Resources: Transportation

1. Which source would you use to learn more about different types of trains?
 - A. the table of contents
 - B. the Transportation Timeline
 - C. the *Encyclopedia of Transportation*
 - D. the letter to the editor

2. These sources give the **most** information about
 - A. balloons.
 - B. cars.
 - C. trains.
 - D. airplanes.

Lesson 11

Using Information Resources: Transportation

1. According to the table of contents, in which part **and** chapter would you find information about submarines?

2. Name the two **most** helpful sources for learning about space travel.

3. If you were writing a report about the Wright brothers, what source would you use first?
