

Excerpts from **Inspiration[®] in Science**



Get started using Inspiration and visual learning in the science curriculum with *Inspiration in Science*. 30+ standards-based lesson plans for grades 6-12 cover life, physical, and earth sciences. Engage students and improve performance with activities that include building concept maps, developing experimental designs and lab reports, and implementing assessment strategies. Each easy-to-use lesson includes an overview, standards match, preparation, step-by-step lesson plan, and enhancements for advanced students.

This preview of *Inspiration in Science* contains:

- Overview of lesson plan book
- Actual table of contents
- Two complete standards-based lesson plans
- Ordering information

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About *Inspiration*[®] in Science

Organization

The major sections of *Inspiration in Science* reflect those found in state and national standards: Science and Society, Life Science, Physical Science, and Earth Science. Within each section, lessons are designated middle school or high school. You may find it helpful to review lessons from subjects and grade levels outside your area; many lessons can easily be modified for other content and classrooms. Additional sections at the end of the book offer further resources for curriculum development and enrichment.

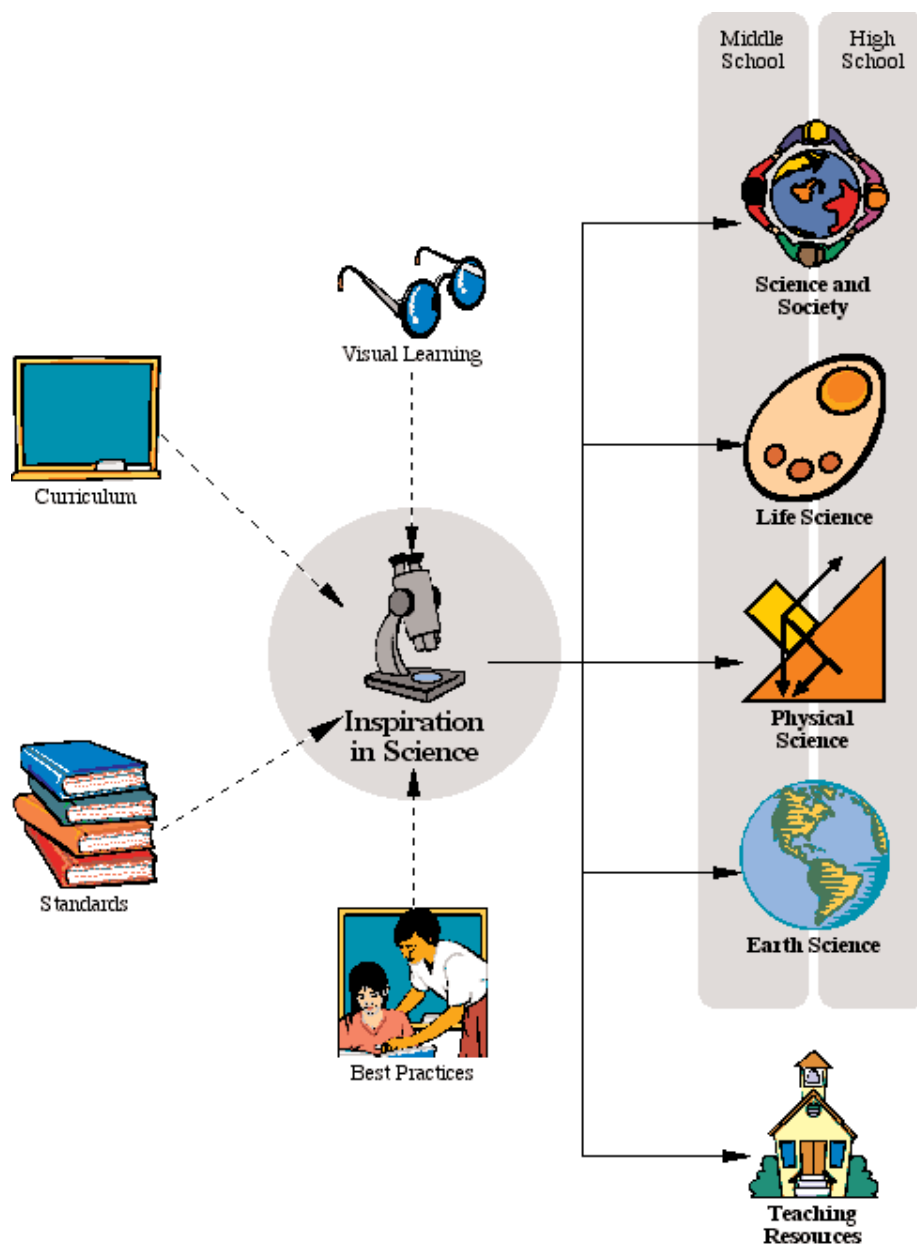


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DNA Fingerprinting

Overview

DNA fingerprinting is a result of recent advances in molecular genetics. The process makes it possible to match tissue, hair, or fluids to the person from whom they came. In this lesson, students use Inspiration® to organize research on DNA fingerprinting into an informational pamphlet.

Standard

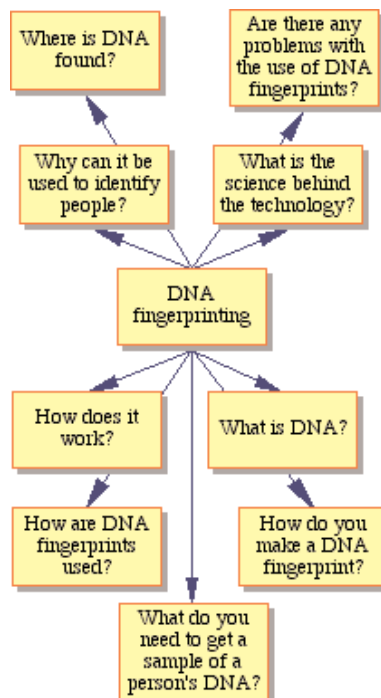
Students understand that the level of relatedness between organisms can be measured by comparing the similarity of their DNA sequences.

Materials needed

- Informational material on molecular genetics and DNA fingerprinting technologies, including the potential misuse of DNA fingerprinting techniques
- Case studies on the use of DNA fingerprinting in solving criminal cases and diagnosing genetic diseases

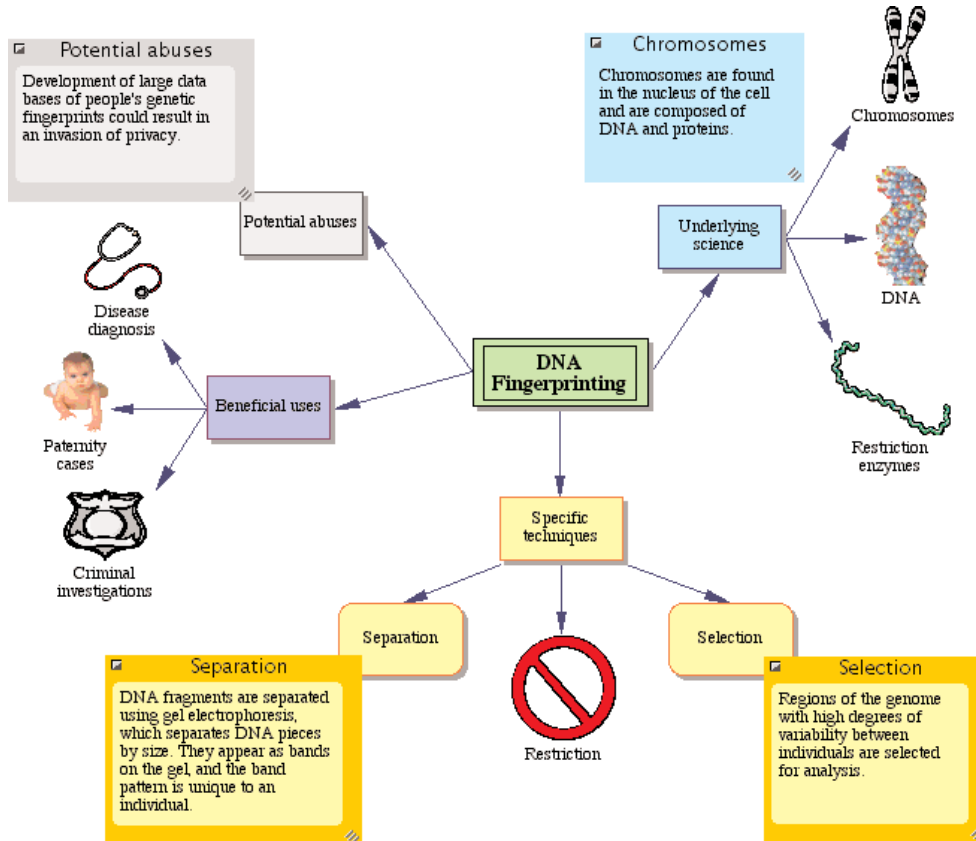
Preparation

1. Ask students to form teams of four and select one member as the recorder.
2. Have each team discuss what they know about DNA fingerprinting. Encourage teams to identify gaps in their knowledge and develop a list of questions about the technology and its uses.
3. Invite teams to present their questions to the class. Use the RapidFire™ tool to record the questions in an Inspiration diagram. Save this diagram for student reference.



Lesson

1. Instruct teams to research aspects of DNA fingerprinting, such as the basic techniques involved, benefits and drawbacks of its use, and case studies. Ask them to record their findings in a diagram like the one below. Have them use the Note tool to record details.



2. Ask teams to present their diagrams to the class and encourage discussion. During the presentations, check for accuracy of information and help students clarify any misunderstandings.
3. Instruct teams to revise their diagrams based on the class discussion.
4. Have teams switch to Outline View and edit their information to form the foundation of an informative pamphlet on the pros and cons of DNA fingerprinting.
5. Instruct teams to click the Transfer button to finalize the layout of their pamphlet in a word processor.
6. Have teams copy their pamphlets and make them available to visitors during an open house.

Climate Comparison

Overview

Atmospheric and geographical characteristics such as air pressure, rainfall, large bodies of water, and mountain ranges influence the climate of any given region. In this lesson, students use weather data to compare and contrast the climates of two locations and relate the observed differences to the local and regional geography.

Standard

Students know various factors that affect weather patterns.

Materials needed

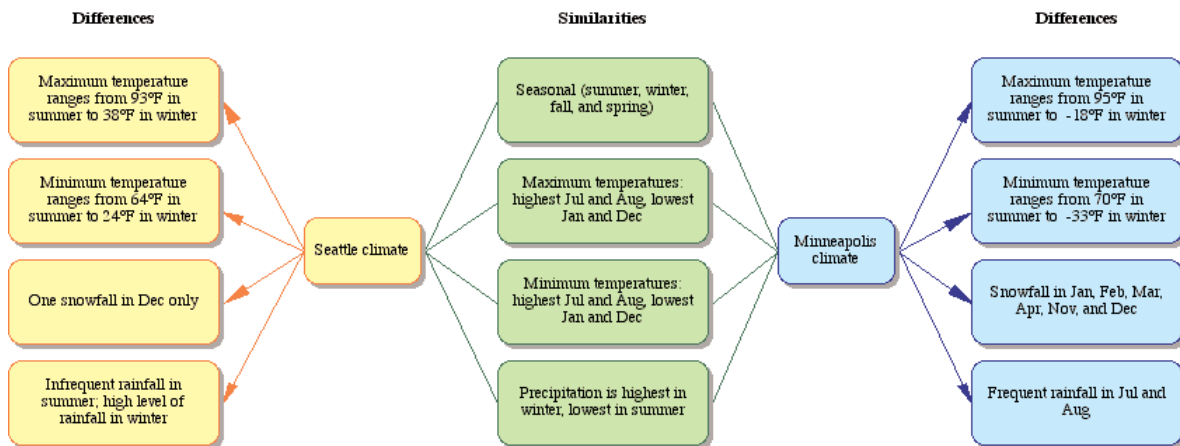
- The National Oceanic and Atmospheric Administration's Climate Diagnostics Center web site, www.cdc.noaa.gov/USclimate/states.fast.html
- Informational material on the effects of geographical features on climate
- Several United States atlases

Preparation

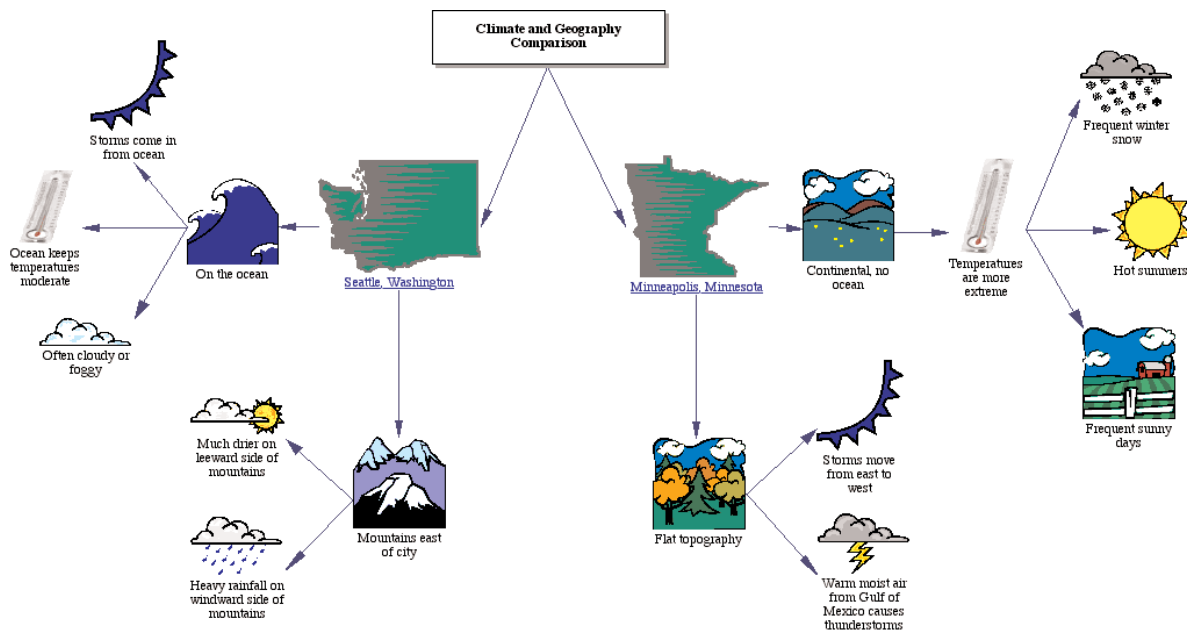
Familiarize yourself with the NOAA web site.

Lesson

1. Ask students to form teams of two to four and instruct them to select two cities in the United States to research. Encourage them to select locations that are geographically different.
2. For each location, have teams research the region's climate using the NOAA web site. Instruct them to gather data covering one month within each season, and focus on parameters such as precipitation, maximum and minimum temperatures, and daily sunlight totals.
3. Ask students to open the Inspiration® Thinking Skills—Comparison template and record their observations in the appropriate symbols.



4. Have teams consult a United States atlas to research the physical geography of their chosen cities. Tell them to pay particular attention to the proximity of oceans, mountain ranges, and large lakes.
5. Encourage students to consult the informational material on the influence of geographical features on climate.
6. Ask teams to create a new diagram comparing the geography and climate of the cities they researched. Have them use the Hyperlink tool to connect the climate data on the NOAA web site to the appropriate symbols.



7. Have teams present their diagrams to the class, clicking on the hyperlinked text to display supporting data. Encourage the class to look for common patterns.
8. Based on the information presented, engage the class in a discussion on how geography influences climate.
9. Give students geographical information about a city that has not been researched and ask them to speculate on its climate. Provide them with the city's climatological data and invite them to assess the accuracy of their predictions.

Ready to order?

→ **Inspiration® in Science: Standards-aligned lesson plans** brings Inspiration and visual learning into lessons that cover life, physical, and earth sciences. Students in grades 6-12 build critical thinking skills as they create concept maps, develop experimental designs and lab reports, and implement assessment strategies.

Special volume pricing

Get the most out of Inspiration and visual learning within your school or across your district. Volume license pricing is available for our standards-based lesson plan books, helping teachers take advantage of the power of visual learning and improve achievement across language arts, science, and social studies. When you purchase a volume license, you receive a bound copy of the lesson plan book and a CD with Adobe PDF files of the lesson plan book and ready-for-use templates that support many of the lessons. Simply place the files onto your server to make the lessons instantly available to your staff.

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* Discounts are available when purchasing multiple titles.

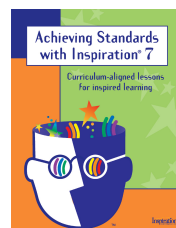
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