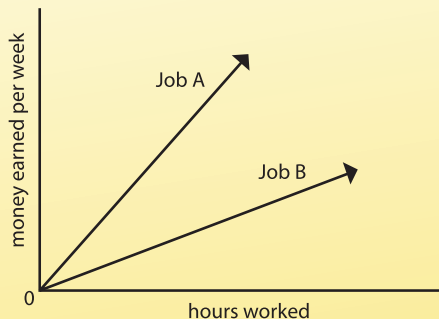


Sample ASSESSMENT QUESTION(S) in this grade:

Math



You have been offered two different jobs represented by line A and line B. Both jobs have similar duties and responsibilities and the pay for both is based on the hours worked per week. Which job would you take? Justify your decision.

Science

Describe at least 2 common types of energy produced and used in the state of New Mexico in terms of cost, environmental impact, risks, and efficiency.

Could you use an alternative form of energy in your home?

Note: *Students are expected to be able to explain their thinking verbally and in writing.*

You and your child may want to try these problems together. If you are interested in additional problems or the answers, please see the <http://mc2.nmsu.edu> website!

What are standards?

Standards are expectations for students and teachers. They are statements that tell what your child should know and be able to do.

Who should I contact to find out more about standards and our schools?

Talk to your child's teacher or principal to learn more about standards based learning. You can also contact the subject area specialists at the New Mexico Public Education Department, Santa Fe, NM.

The content and design of this brochure was created by New Mexico educators, including staff from the New Mexico Public Education Department and the Southwest Educational Development Laboratory (SEDL) during the 2004-2005 school year.



What should
**Eighth grade
mathematics
and science**
look like
in your school?



Based on New Mexico
Standards and Benchmarks

What should I see happening in my child's classroom?

Every day, students should be:

- relating math and science to their everyday lives
- asking and answering questions about their surroundings
- solving math and science problems in different ways
- working with other students to solve problems
- explaining and justifying their own ideas in math and science
- DOING activities! ... using tools and objects to learn and to show what they know
- using diagrams, graphs, and numbers to show relationships in math and science
- learning that everyone can do math and science

This is called Standards Based Instruction!



Big ideas in Eighth Grade SCIENCE

Scientific Thinking

- Use various tools to collect and analyze data
- Find alternative explanations for what is seen
- Use formulas, equations, and graphs to describe and communicate findings from a science activity

Physical Science

- Learn about the building blocks of atoms
- Describe everyday physical and chemical changes that happen in nature
- Explore the reflection, refraction, and absorption of light
- Learn about simple electrical circuits
- Know about potential and kinetic energy, and that they can be transformed from one to the other
- Understand and apply Newton's laws of motion to objects
- Explore different kinds of forces and how multiple forces acting on an object can reinforce or cancel one another

Life Science

- Explain how changes in energy flow can affect an ecosystem
- Learn about the role of carbon in living things
- Know how chemicals affect activity in cells

Earth and Space Science

- Explore the many roles water plays on Earth
- Know how we learn about the universe by studying the light from the sun and other stars
- Learn about energy resources in New Mexico

Science and Society

- Research risks and benefits associated with energy production

Big ideas in Eighth Grade MATHEMATICS

Number and Operations:

- Be able to identify and sort numbers based on their properties and size
- Use rational and irrational numbers to perform operations including addition, subtraction, multiplication, division, square roots, cube roots
- Use appropriate tools and methods to estimate the sizes of numbers within a problem

Algebra:

- Represent linear relationships in a variety of ways.
- Understand how slope and change are related to a linear relationship
- Solve multi-step linear equations, proportions and problems involving percentages
- Represent information in a variety of ways (tables, graphs, equations, words)
- Explore different methods to solve problems involving patterns and change

Geometry:

- Explore what happens when 2-dimensional objects are transformed by turning them, shrinking them or making them bigger
- Explore properties related to similarity in triangles and quadrilaterals
- Investigate the properties of various geometric objects, including points, lines, circles, angles, and parallel lines
- Combine algebra and coordinate geometry to solve problems (distance between two points)

Measurement:

- Understand and calculate volume and surface area using metric and standard units
- Use proportions and estimations to measure objects

Data Analysis and Probability:

- Collect and organize data in a variety of ways including plots, pie graphs, charts, diagrams, and tables
- Conduct simple experiments to make predictions, collect data, analyze results and make conclusions
- Understand how probability is calculated and how it can be used to predict real world events