RETHINK EDUCATION
North Carolina Department of Public Instruction

An At-Home Guide for Families

3rd Grade Science in North Carolina Public Schools

Course Outline

At the end of the course, my child will know…

- how to infer changes in speed or direction resulting from forces acting on an object
- how to compare the relative speeds (faster or slower) of objects that travel the same distance in different amounts of time
- how to explain the effect of earth's gravity on the motion of any object on or near the earth.
- how to recognize that air is a substance that surrounds us, takes up space and has mass
- how to compare solids, liquids, and gases based on their basic properties.
- how to summarize changes that occur to the observable properties of materials when different degrees of heat are applied to them, such as melting ice or ice cream, boiling water or an egg, or freezing water.
- how to recognize that energy can be transferred from one object to another by rubbing them against each other
- how to recognize that energy can be transferred from a warmer object to a cooler one by contact or at a distance and the cooler object gets warmer.
- how to recognize that changes in the length and direction of an object's shadow indicate the apparent changing position of the Sun during the day although the patterns of the stars in the sky, to include the Sun, stay the same.
- how to compare Earth's saltwater and freshwater features (including oceans, seas, rivers, lakes, ponds, streams, and glaciers).
- how to compare Earth's land features (including volcanoes, mountains, valleys, canyons, caverns, and islands) by using models, pictures, diagrams, and maps.
- how to compare the different functions of the skeletal and muscular system.
- how to explain why skin is necessary for protection and for the body to remain healthy.
- how to remember the function of the following plant structures as it relates to the survival of plants in their environments:

  • Roots – absorb nutrients

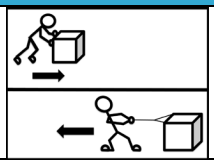
- Stems – provide support
- Leaves – synthesize food
- Flowers – attract pollinators and produce seeds for reproduction.

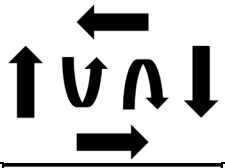
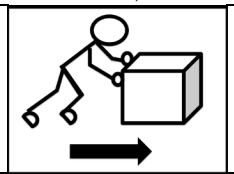
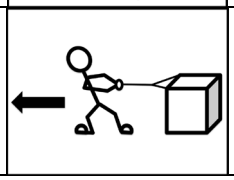
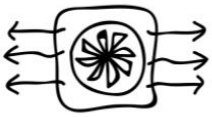
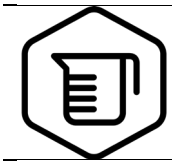
- how to explain how environmental conditions determine how well plants survive and grow.
- how to summarize the distinct stages of the life cycle of seed plants.
- how to explain how the basic properties (texture and capacity to hold water) and components (sand, clay and humus) of soil determine the ability of soil to support the growth and survival of many plants.

Recognize that the earth is part of a system called the solar system that includes the sun (a star), planets, and many moons and the earth is the third planet from the sun in our solar system. Curious what the specific standards are for 3rd Grade Science in North Carolina?

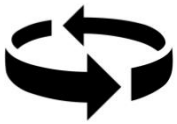
Check out the **North Carolina Standard Course of Study** to learn more. Looking for additional explanations about what students should be able to do at the end of this course? Check out **NC DPI's unpacked contents document** aligned to the course standards.

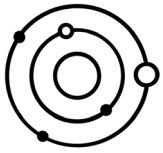
Key Vocabulary

Visual	Term	Definition
	**Force**	Pushes or pulls that act on objects and cause them to move or change direction.
	**Motion**	When an object moves because of a force (push or pull)
	**Speed**	The rate at which something moves.

Visual	Term	Definition
	**Direction**	The path in which something moves.
	**Push**	To use force to move an object forward or away from you.
	**Pull**	To hold onto or move an object toward yourself
	**Air**	An invisible substance that is a mix of gasses.
	**Volume**	The amount of space occupied by an object.
	**Mass**	The amount of material that makes up an object or substance.
	**Matter**	Something that has volume and mass.
	**Substance**	The material, or matter, that makes up something.
	**Solid**	A substance that has a certain shape or size, has mass, and does not take on the shape of a container.

Visual	Term	Definition
	**Liquid**	A substance that takes on the shape of a container, is able to pour, and has a certain size or volume. Outside of a container liquid has no definite shape.
	**Gas**	A substance that has no size or shape. It can fill a sealed container. It has mass.
	**Property**	A characteristic or trait that you can use to describe matter by observation, measurement, or a combination of these.
	**Molecule**	A molecule is two or more atoms that are joined (or "bonded") tightly together. Molecules make up substances.
	**Heat Energy**	An object has heat energy because of the movement of its molecules. Heat is transferred as the temperature rises and falls. The heat energy can cause changes in the state of matter.
	**State of Matter**	This is used to describe physical properties (the features you can observe) of matter; whether something is a solid, liquid, or gas.
	**Planet**	The largest round object that orbit the Sun in space.
	**Sun**	A star that is at the center of the Solar System. It is a ball of gas that gives off a great amount of energy. Our life on Earth depends on the heat and the light from the Sun.

Visual	Term	Definition
	**Moon**	A large natural object in space that orbits the Earth.
	**Asteroid**	Rocks that orbit the Sun and are much smaller than planets, these are not round.
	**Comet**	An object made up of ice and dust.
	**Rotate**	An object turns on a center point.
	**Axis**	An imaginary line that an object spins upon.
	**Revolve**	To move in an orbit
	**Inner Planets**	The four planets that are closest to the Sun are Mercury, Venus, Earth, and Mars. These planets have thin atmospheres, solid surfaces, few or no moons, and no rings.
	**Outer Planets**	Neptune. These planets have thick atmospheres, no solid surfaces, and many rings and moons.

Visual	Term	Definition
	**Orbit**	The path of an object around a point in space.

Learning in Action: Grade Level Skills

Examples of Grade Level Skills

- Describe the structure and properties of matter before and after they undergo a change.
- Recognize the similarities and differences between the characteristics of solids, liquids, and gasses.
- How do you know if a substance is a solid, liquid, or gas?
- What are some everyday examples of forces causing objects to change speed and direction?
- What are the functions of the skeletal system?
- What are some examples of forces causing objects to change speed?
- How are speed, distance, and time related?
- Explain how the earth's gravity pulls on all objects within or near the Earth's atmosphere.
- Ross puts a pot of water on the stove and when he comes back, the water is boiling and moving faster. He isn't sure what happened to make this happen. What would you tell Ross happened? Make sure in your response to him you use the following words: movement, faster, slower and particles.
- Summarize changes that occur to the observable properties of materials when different degrees of heat are applied to them, such as melting ice or ice cream, boiling water or an egg, or freezing water.

Resources

Links and online resources to allow you to support your child's learning.

- Crash Course Kids
- IXL 3rd Grade Science
- National Geographic - Learn At Home: Grades 3-5
- Engaging Science & Math Lesson for K-8
- Bill Nye the Science Guy Website
- Ck-12 Third Grade Science
- PBS Kids Science

- #GoOpenNC 3rd Grade Science
- Helping Your Child Learn Science
- Community Resources for Science
- 3rd Grade Science Educational Resources

At-Home Connections

- Have students talk about the structure and properties of matter before and after they undergo a change.
- Have students write children's books on the topics to help them be able to explain a concept to others.
- Have students look at the similarities and differences between the characteristics of solids, liquids, and gasses with items inside and outside the home.
- Have students with parent assistance video record themselves explaining how they know if a substance is a solid, liquid, or gas?
- Point out and discuss possible science-related career choices.
- Talk about how speed, distance, and time are related?
- Think of examples of forces that you know about. What are the similarities and differences between them?
- If you travel, have your student compare the speed, distance, and time of different ways of traveling to get to your destination. Which way of travel would be the quickest? slowest?
- Have your student point out different parts of his or her skeletal system and explain the function of each.
- Have your student summarize changes that occur to the observable properties of materials when different degrees of heat are applied to them, with a parent while in the kitchen doing activities such as melting ice or ice cream, boiling water or an egg, or freezing water.

Challenges to Anticipate

It is common for many students (even those who are computer savvy) to struggle in an online course. For example, students may need extra support with:

- Time management
- Organization
- Focus Strategies
- Technical skills like creating videos or uploading assignments
- Course Navigation

These struggles are normal, acceptable, and developmentally appropriate. You can utilize the support and resources around the platform and technical issues that are provided. You can also find more about supporting your online learner at Edmentum and Common Sense education.

In terms of the science content, some students may struggle with things like:

- New Vocabulary Words
- Critical Thinking
- Making Connections

You can support your students by keeping this document handy to help you with the vocabulary words in each section. You can also learn more about critical thinking and making connections in science using the links below.

- Critical Thinking
- Making Connections

Communicating with Your Child's Teacher

Still feeling stuck? Reach out to your child's teacher to discuss what you can do further your child's learning. Some questions that might guide your discussion:

- What resources would you suggest I use to support my child?
- Where do you see my child struggling? What can we do together to help?
- What should my child practice at home?
- What collective message can we send together to help my child learn?

Need Technical Help?

Reach out to your student's home school for technical assistance. Include the type of device (PC, Mac, Chromebook, etc.) and browser (Chrome, Firefox, Safari, etc.).

Citations

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grade/science/. Accessed 27 December 2022.
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