2nd Grade - Elementary Science Bundle # 11

Title	Suggested Dates
Exploring Motion	April 18 – May 6 (13.5 days)

Link to Integrated Process Skills **Link to Assessment** **Link to Related Assurance Words**

Big Idea/Enduring Understanding	Guiding Questions
Motion can change the position of an object. There are many forms of movement. Force affects movement.	How can the position of an object change due to movement? How will the amount of force applied affect the time it takes the object to change position?

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the district curriculum.

Knowledge & Skills with Student Expectations	District Specificity/Examples	Suggested Resources (See note above)
2.6 Force, motion, and energy. The student knows that forces cause change and energy exists in many forms. The student is expected to: 2.6c trace the changes in the position of an object over time such as a cup rolling on the floor and a car rolling down a ramp **2.6 Force, motion, and energy. The student knows that forces cause change and energy exists in many forms. The student is expected to:** 2.6d compare patterns of movement of objects such as sliding, rolling, and spinning	Including: • Rolling o Smooth top over bottom pattern (as opposed to "flipping"); shape matters o On a level area, ramp, smooth surface, textured surfaces o Fast and slow o Examples: wheels on a road, bodies on the ground, balls, somersaults, "stop drop and roll", skateboards • Sliding o Smooth flat movement o On a variety of surface types o fast and slow o Examples: skiing, slides, baseball players, slip & slides, on ice, sliding a tray across the table • Spinning o Turning around a central point (rotation) o Varying speeds / surfaces o Examples: tops, "twisting" swings, merry-go-round, blender, tornado, washer/dryer, people spinning in a circle such as an ice skater, games such as "wheel of fortune" at Gattiland / Main Event, etc **NOTE**: 1st grade introduces "Push" and "Pull" through the use	TAKScopes 2.6c,d Patterns of Movement AIMS 1st Grade Science Texas Core Curriculum "Twist and Twirl Buttons", page 78 "Spin Doctor", page 84 AIMS 2nd Grade Physical Science Texas Core Curriculum "Shapes on the Move", page 74 "Puffer Paths", page 219 Gateways: 2nd Grade 2:3 Changes in Motion, Activity 2 (Activity 1 is a good starting point: focus is on properties and measurement) FOSS KIT: Balance and Motion Investigation 1: Balance Investigation 2: Spinners Investigation 3: Rollers FOSSWEB: Rollercoasters FOSSWEB: Motion Movie Clips

	of magnets Examples of tracing: • With a pencil / marker • Kinesthetically • Car wheels or other object though paint then on paper • Pictures (dotted lines showing movement patterns)	BrainPopJr: "Pushes and Pulls" United Streaming: "How Things Move" "TLC Elementary School: Rules of Motion and Forces" (segment: Facts about Forces) "The Blue Dragon: Slipping and Sliding" "Peep and the Big Wide World: Quack and the Very Big Rock" TOYS: Spirographs
Scientific Investigation and Reasoning		**Back to Top**
2.1 Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures. The student is expected to: 2.1a identify and demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including wearing safety goggles, washing hands, and using materials appropriately 2.1b describe the importance of safe practices 2.1c identify and demonstrate how to use, conserve, and dispose of natural resources and materials such as conserving water and reuse or recycling of paper, plastic, and metal	Be aware of movement and space required for the movement as well as outdoor safety when investigation movement. Including: • No tasting or touching unless instructed • Safe smelling – wafting • Goggles, as needed • Wait for teacher directions • No glassware • Students do not handle hot water, hot plates or burners. • Wash hands after science activities • Safe use of tools, such as scissors • Review investigation safety procedures o directly point out precautions, possible safety risks, specific guidelines for the lesson for both indoor and outdoor activities, as applicable. o encourage students to identify these on their own throughout the year [document in science notebooks via words and/or pictures]	PISD Science Safety Page Texas Science Safety Standards DuPont Science Safety Zone
2.2 Scientific investigation and reasoning. The student develops abilities necessary to do scientific inquiry in classroom and outdoor investigations. The student is expected to: 2.2a ask questions about organisms, objects, and events during observations and investigations 2.2b plan and conduct descriptive investigations such as how organisms grow	Descriptive Investigation sample: How can I make this object roll? Spin? Slide? Comparative Investigation sample: Which of these objects slides the easiest? Rolls down the ramp the fastest? Classroom Techniques: • A minimum of 3 models / examples should be used enabling different modalities of learning	What are descriptive, comparative, and experimental investigations? KLEW/ Claims & Evidence

2.2c collect data from observations using simple equipment such as hand lenses, primary balances, thermometers, and non-standard measurement tools 2.2d record and organize data using pictures, numbers, and words 2.2e communicate observations and justify explanations using student-generated data from simple descriptive investigations 2.2f compare results of investigations with what students and scientists know about the world	• Teacher uses "think aloud" technique throughout the investigation • Use a variety of questions (both open and closed) • Both academic and informal science language should be used to develop appropriate vocabulary in context Explicitly model the relationship between the question, materials, and steps in the investigation	
2.3 Scientific investigation and reasoning. The student knows that information and critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to: 2.3a identify and explain a problem in his/her own words and propose a task and solution for the problem such as lack of water in a habitat	Sample problem: Student are sliding down the playground slide too fast and being injured. How can we slow them down and reduce injuries?	Using Socratic Seminars for higher-order thinking and discussion Multisensory Strategies for Science Vocabulary by Sandra Husty and Julie Jackson includes Bag & Tag
2.4 Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to: 2.4a collect, record, and compare information using tools, including computers, hand lenses, rulers, primary balances, plastic beakers, magnets, collecting nets, notebooks, and safety goggles; timing devices, including clocks and stopwatches; weather instruments such as thermometers, wind vanes, and rain gauges; and materials to support observations of habitats of organisms such as terrariums and aquariums 2.4b measure and compare organisms and objects using non-standard units that approximate metric units	Including: • Notebooks • Computers (simulations) • Rulers • Timing devices • Variety of objects and surfaces including students' bodies Such as: • cameras	

Related Assurance Words

Back to Top

classify, communicate, compare, demonstrate, dispose, energy, measure, motion / movement, patterns, predict

Assessment

Back to Top

Assessment Probes

Uncovering Student Ideas in Science, Vol. 3 (Page Keeley)
Rolling Marble (tweak this), page 7