CONTENT AREA/COURSE General Science Grade 2
UNIT TITLE Classifying Matter

APPROXIMATE LENGTH 4-5 weeks (one week includes 30 minute engagement, 30 minute exploration, 30 minute extension)
OVERVIEW In this unit, hands-on investigation is critical to student success. The learning standards that frame learning in this case, ask students to identify matter and describe matter using different observable properties. Furthermore, this unit incorporates engineering and asks students to use their knowledge of matter and observable properties of matter to determine which type of matter is best suited for an intended purpose. Students should make claims, collect evidence, and provide reasoning backed by evidence to support or refute original claims about matter and how it may/may not be best suited for an intended purpose.

STAGE 3 – LEARNING EXPERIENCES *(Include source information when possible.)*		
REMEMBERING • Read *Harcourt Science* 288-309 • Vocabulary stations (e.g, describe materials using properties, use properties to classify materials, determine uses of materials based on properties) • Use BrainPop Jr. Making Observations video as an introduction to planning an investigation • Show examples of matter (e.g., solid ball, wood block, glass jar with lid); ask students to define matter using turn and talk; summarize in chart • Cut out examples of matter from magazines; sort pictures and create a poster • Conduct a gallery walk of materials and lists of words that can be used to describe each material; add to these lists during walk	**UNDERSTANDING** • Differentiate between object and material of object • How do the actions differ under certain circumstances (e.g., construction paper vs. sandpaper) • Classify matter according to their properties • Sort solids into groups on the basis of properties (e.g., color, flexibility, hardness, texture, absorbency) • Ask students to discuss useless material/property combinations (e.g., rain boots made of paper, blankets made of straw, frying pans made of rubber, baseballs made of cotton)	**APPLYING** • Determine hardness of various rocks and minerals • Search for classify different types of materials/matter in the environment • Describe Gooey Slime using observable properties • Compare balloon filled with water/ice; how is matter different? • Use stations (e.g., color, absorbency, strength, flexibility, hardness) to compare and contrast materials; create summer chart (e.g., writing, illustration) **SEE NEXT PAGE FOR MORE**

ANALYZING • Test materials (e.g., cotton, wool, microfiber, fur) used in gloves to determine best material for specific purpose (e.g., swimming, construction, cooking) • Perform paper towel testing (e.g., absorbency) • Test spoons made of different types of materials (e.g., plastic, wood, metal) to determine best for specific purpose (e.g., picking up heavy items, stirring hot soup) • Find 3 different ways to classify the same objects with various observable properties of matter	**EVALUATING** • Look at data from different experiments (e.g., gloves, spoons, paper towels) to determine material best for specific purpose • Evaluate levels of flexibility by testing shoe soles/different sports balls • Use texture to improve friction between two objects • Choose the best test to determine whether matter is a solid or liquid (e.g., Oobleck); complete conclusion anchor chart • Assess materials best suited for purpose (e.g., house, boat)	**CREATING** • Create a table comparing and contrasting properties of five unfamiliar materials • Develop a poster to show why objects are made of intended materials (e.g. one side - water is made of plastic because, other side - not made of cloth because) • Research the job of a materials scientist; create a job description used to recruit a new hire • Design classification system of everyday objects using material properties (e.g., ruler, pencil, chopstick, spoon, can, aluminum foil, paper clip, utensil, bottle, eraser, marble, leaves, rocks, clay) [items or photographs] • Plan an investigation to determine the material best suited for a grocery bag