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| Earth and Space Science | Life Science | Physical Science | Technology/Engineering |
| * Observe weather from day to day/season to season; record in journal, video diary, audio record; make qualitative observations | * Observe objects sealed within black film canisters/touch bags; encourage students to use their senses to determine what is in the canister/touch bag using different senses | * Sort objects based on characteristics; describe categories used for sorting | * Sort objects based on characteristics; describe categories used for sorting (focus on human-made versus natural) |
| * Construct simple weather instruments (e.g., rain gauge, wind sock); use available instruments to make quantitative type observations [may also use thermometers, anemometers, etc.] | * Take the labels off of the salt and sugar; ask students to determine which is which using senses other than taste | * Construct a marble run; ask students to describe the movement of the marble through the run based on pushes and pulls experienced by the marble; ask students to redesign the run to include more pushes and pulls on the marble | * Provide objects made of human-made and objects made of natural materials; ask students to describe characteristics of objects; ask students to identify purpose of objects |
| * Take a gallery walk outside; look for patterns; make drawings/take photos; produce a coffee table book | * Ask students to describe popcorn using the five senses; create a comparison chart of popped and unpopped kernels | * Share Rube Goldberg machines with students found on Google; ask students to describe the movement of the object(s) through the Rube Goldberg machine from start to finish based on pushes and pulls experienced by the object(s) | * Provide plans for a paper airplane; construct a paper airplane from different types of paper; ask students to compare and contrast which paper types worked better than others and give reasons why |
| * Adopt a tree right outside the classroom window (e.g., easily accessible location); observe and make recordings (e.g., photos, drawings) weekly; produce a flip book at the end of the year [also possible to make a journal of audio recordings taken throughout the school year] | * Paint with tea bags; ask students to use their five senses to describe the activity including doing the activity itself, as well as the resulting art | * Construct Pom Pom Poppers/Marshmallow Shooters; ask students to describe motion of projectile and describe causes for its particular movement | * Construct simple weather instruments using different materials (e.g., nylon windsock, cotton windsock); ask students to compare and contrast which material type worked better and give reasons why |
| * Using tools of science (e.g., magnifiers) observe leaves from various times of year (e.g., different seasons)/from different weeks/under different weather conditions (e.g., sun, wind, rain) | * Place scent on cotton balls; place cotton balls within salt and pepper shakers; ask students to describe using their sense of smell what is on the cotton ball | * Do magnet painting; ask students to describe what happens when painting is done with magnets of greater force/lesser force | * Construct a pinwheel using different types of paper; ask students to compare and contrast which paper types worked better than others and give reasons why |
| * Observe daily sunrise and sunset at the same time for set number of days; record in journal, video diary, audio record; make qualitative observations | * Go outside on a listening walk to determine through observation if something is living or nonliving | * Construct balloon rockets with different shape/capacity balloons; ask students to compare and contrast motion of rocket based on balloon type | * Construct a foil boat that holds pennies; determine which boats hold more pennies; allow students to redesign boats; ask students to compare and contrast which boat shape worked better than others and give reasons why |
| * Observe night sky (e.g. moon) at the same time for set number of evenings; record in journal, video diary, audio record; make qualitative observations | * Compare and contrast living worms to gummy words; ask students to identify which is living an which is nonliving using their observations |  | * Construct a marble run; ask students to describe the process used in designing it and building it; determine which run moves marble fastest/slowest; allow students to redesign; ask students to compare and contrast which run worked better than others and give reasons why |
|  | * Construct Winogradsky columns; make observations to determine what is living and what is nonliving |  | * Share Rube Goldberg machines with students found on Google; ask students to describe the movement of the object(s) through the Rube Goldberg machine from start to finish |
|  | * Construct self-contained 2-L bottle ecosystems; make observations daily on living and nonliving things included within the ecosystem |  | * Build a tower as tall as possible using only two materials (e.g., paper and tape, toothpicks and clay); ask students to describe their design; determine which design and/or materials produced tallest tower and provide reason(s) why |
|  | * Sort objects based on living and nonliving characteristics; describe categories used for sorting |  |  |