Title:	Classification of Living Things Foldable	
Author:	Melanie Kiker Little Rock Central High School Little Rock	
Course: **Grade Level:**	Life Science, Biology, Environmental Science, Earth Science, English, G/T 7-12	**Duration:** 20-minute lesson and 1-hour class assignment or take-home assignment

Objective:
Students will demonstrate an understanding of the classification of life and the characteristics of the domains and kingdoms. Each Kingdom will include its contribution to fossil fuel production.

Summary of Lesson:
Students design a folder that will condense the information on the classification of life. To further their understanding of fossil fuels, they will identify the contribution of each Kingdom to the production of fossil fuel production.

Arkansas Standards:

CODE	GRADE	SLE	STANDARD
Life Science	**9-12**	**7-LS2-2**	Construct an explanation that predicts patterns of interactions, among organisms across multiple ecosystems
		7-LS1-7	Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem
Biology 9-12	**9-12**	**BI-LS2-3**	Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions
		BI-LS1-2	Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms
		BI-LS2-6	Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem

		BI-LS2-8	**E**valuate the evidence for the role of group behavior on individual and species changes to survive and reproduce
		BI-LS4-4	Construct an explanation based on evidence for how natural selection leads to adaptation of populations
		BI-LS4-5	Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species
Environmental Science	**9-12**	**EVS-LS2-2**	Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales
		EVS-LS2-6	Evaluate evidence for the role of group behaviors on individual and species chances to survive and reproduce
Earth Science	**9-12**	**ES-ESS2-2**	Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems
		ES-ESS2-7	Construct an argument based on evidence about the simultaneous coevolution of Earth's system sand life on Earth.
Language Arts	**9-12**	**RI.9-10.9** **RI.11-12.9**	Analyze documents of historical and literary significance, including US documents when appropriate, noting how they address related themes and concepts
		W.9-10.1.C **W.11-12.1.C**	Use words, phrases, and clauses to link the major sections for the text, create cohesions and clarify the relationships between claims and reasons, reasons and evidence, and claim(s) and counterclaims; include commentary for support
		W.9-10.1.D	Establish and maintain an appropriate format, formal style, and objective tone within the norms and conventions of the discipline
		W.9-10.2 **W.11-12.2**	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analyst of content.
		W.9-10.2.A **W.11-12.2.A**	Introduce a topic, organize complex ideas, concepts, and information to make important connections and distinctions; include appropriate text features (e.g.,

			captions, headings), graphics (e.g., figures, tables), and/or multimedia
		W.9-10.2.B **W.11-12.2.B**	Develop the topic with well-chosen and sufficient factors, extended definitions, concrete details, quotations, commentary, or other information and examples appropriate to the audiences' knowledge of the topic.
		W.9-10.2.C **W.11-12.2.C**	Use appropriate and varied transitions to ink the major sections of the text, create cohesions and clarify the relationships among complex ideas and concepts.
G/T		**C.1.7-12.8**	Create unique products or ideas by combining, organizing, redesigning, reversing, or substituting concepts or materials

Teacher Excellence Support System (TESS):
1c: Setting instructional outcomes, 1d: Demonstrating knowledge of resources, 1e: Designing coherent instruction, 1f: Designing student assessments, 3b: Using questioning/prompts and discussion, 3c: Engaging students in learning, 3d: Using assessment in instruction.

Instructional Strategies and Practices:
Nonlinguistic Representations- Use physical models and physical movement to represent information.

Bloom's Level: Highest Level Only
Creating

Materials and Resources:

- Manila folders
- Colored pencils
- Markers
- Construction paper
- Glue
- Possible websites:
  - http://www.windows2universe.org/earth/Life/classification_intro.html
  - http://rmascience.weebly.com/classification-of-organisms.html
    or have students do an internet search using the key phrase "classification of living things."

Formative Assessment:

Students pin their foldables around the room and the class does a "gallery walk" evaluating each other's projects. Students are required to leave one positive piece of feedback and one piece of constructive criticism for each project.

Summative Assessment:

There is also a quiz given at the end of class covering the basics of classification.

Notes to Teacher:

Previous knowledge includes an introduction to taxonomy, cladograms, and the basic characteristics of each kingdom with video and actual examples. Smartboard, video or handouts can be used for any of these lessons.

Student Activity

1. Instructions for Smartboard:
    - This is a folder that will compact information on the classification of life.
    - The outside of the folder must have a title that includes the phrase "Classification of Life."
    - Decide on a theme and choose a method of display for this project. An area of personal interest may be used as a theme. (Example, soccer, sailing, marine life—the example shown is a school mascot.)
    - The information must be glued in the folder so that a flap can be raised to review the material.
    - More specific flaps should be underneath their corresponding general flaps. (Example: Kingdom Animalia is found under the Domain Eukarya flap.)
    - Each Kingdom must have a flap that describes the contribution to fossil fuel production

2. If students do not finish in class, they may take this home and bring it back the next class. (Self-paced)

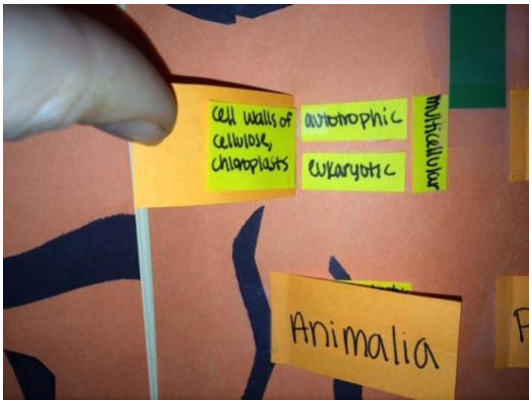
3. Students pin their foldables around the room and the class does a "gallery walk" evaluating each other's projects. Students are required to leave one positive piece of feedback and one piece of constructive criticism for each project.

4. The teacher will use a rubric to grade the foldables. (A printable copy of the rubric is available at https://arkansasenergyrocks.com/educators/lesson-plans-9-12/. Select the lesson title, then Teacher Information Sheet.)

Examples of finished product:

Inside the manila folder the student has three large flaps (paw prints) that are labeled with the domains. The theme here is a mascot, the tiger.

Under the Eukarya paw print there are four flaps for the kingdoms that are under the Eukarya domain.



Under each of the Kingdoms there are flaps that describe the 1) cell type (eukaryotic or prokaryotic), 2) movement (cilia, flagella, non-motile, 3) cell organization (uni or multicellular), 4) cell structure, 5) examples of organisms, 6) contribution to fossil fuels.

Teacher Information Sheet: A printable copy of the rubric is available at https://arkansasenergyrocks.com/educators/lesson-plans-9-12/. Select the lesson title, then Teacher Information Sheet.

Teacher Information Sheet
Classification of Living Things
Rubric for grading the foldable

Folder Includes all 3 Domains.	/5
Folder includes all 6 Kingdoms	/5
Each Kingdom has flap with examples	/5
Each Kingdom has a flap that describes how the group gets nutrition	/5
Each Kingdom has a flap that describes contribution to fossil fuel production	/5
Each Kingdom has a flap that describes the cell type	/5
Each Kingdom has a flap that describes the cellular structure	/5
Neat, easy to read, good study guide, and rubric placed inside foldable.	/5
Creativity, this includes not using examples given on the table but finding your own.	/10
Grand Total	/50