

Jefferson City Public Schools–Curriculum

SUBJECT: Elementary

COURSE: EER

STRAND: Budding Botanist

Objectives	Assessment/Evaluation	Instructional Activities
(A) Dissect monocot and dicot seeds and label the parts of the seed Performance: 1.2, 1.3, 1.5, 1.6, 1.8, 2.4, 3.5 Knowledge: (CA) 3 (SC) 3,7 (MA) 3 CAGLE: R.3.A (Gr. 5) MAGLE: DP.1.A (Gr. 4) SCGLE: SC3.1.Aa (Gr. 6); SC4.1.Aa,b (Gr. 4) SC7.1.Ba-c (Gr. 5) NETS: (3-5) 8 DOK: 1,2	Students will complete a Seed Lab comparison, observation and diagram chart – assessed using a scoring guide	• Seed Facts handout • Seed Lab: • handouts • activity sheets • Monocot and Dicot Seed Lab activity sheets • Microscope use: looking at seeds
(B) Dissect monocot and dicot flowers. Diagram and explain the structure and function of the various parts of flowers and their role in seed development Performance: 1.2, 1.3, 1.5, 1.6, 1.8, 2.4, 3.5 Knowledge: (CA) 3 (SC) 3,7 (MA) 3 CAGLE: R.3.A (Gr. 5) MAGLE: DP.1.A (Gr. 4) SCGLE: SC3.1.Aa (Gr. 6); SC7.1.Ba-c (Gr. 5) NETS: N/A DOK: 1-3	Flower Study handout – assessed using a scoring guide	• Parts of a Flower diagram • Flower Study lab • Flower Study handout

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(C) Conduct a germination study to determine the percentage of seeds germinated when environmental conditions such as moisture, temperature, or oxygen levels are varied Performance: 1.1-1.4, 1.6, 2.1,2.3,4.6 Knowledge: (CA) 1-3,6 (MA) 3,4 (SC) 3,7 CAGLE: W.2.Ea-f; LS.2.A; IL.1.A (Gr. 5) MAGLE: AR.1.B (Gr. 5); DP.1.A (Gr. 4) SCGLE: SC7.1.Aa-f; SC7.1.Ba-e (Gr. 7); SC7.1.Da (Gr. 5) NETS: (3-5) 8 DOK: 1-4	• Design and conduct an experiment – assessed using a scoring guide • Presentation of experiment – assessed using a scoring guide	• Experimental Design handouts • Variety of seeds for plant studies: • monocot • dicot • gymnosperm • Germination Study lab
(D) Conduct a laboratory experiment using the scientific method and create a display for the experiment and the results. The study should be conducted on: • geotropism • phototropism • thigmotropism in plants Performance: 1.1-1.3, 1.6, 1.8, 2.1-2.3, 4.1 Knowledge: (CA) 1,3,4,6 (MA) 3 (SC) 3,4,7 CAGLE: R.3.A,D (Gr. 5); W.1.Aa-e (Gr. 6); W.2.Ea-f (Gr. 5) MAGLE: DP.1.A,C (Gr. 4) SCGLE: SC3.1.Aa (Gr. 6); SC7.1.Aa-d; SC7.1.Ba-f (Gr. 5) NETS: (3-5) 8 DOK: 1-4	Science journal – assessed using a scoring guide	• Class lab: design and conduct an experiment to explore growth movements in plants • Science journal for lab activity

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(E) Conduct experiments using the scientific method to vegetatively propagate plant specimens Performance: 1.1-1.3, 1.8 Knowledge: (CA) 1,3,4 (SC) 3,7 CAGLE: R.3.A-D (Gr. 5) SCGLE: SC3.1.Aa (Gr. 6); SC3.3.Ab (Gr. 8) SC7.1.Aa-d; SC7.1.Ba-f; SC7.1.Ca-d; SC7.1.Da (Gr. 5) NETS: (3-5) 8 DOK: 1-4	Written test over vegetative propagation	• Handouts on vegetative: • propagation-budding • rhizomes • runners • bulbs • grafting • layering • cuttings • Plant Propagation lab • PowerPoint: <i>Asexual Reproduction in Plants</i>
(F) Observe and record the production of oxygen through photosynthesis Performance: 1.1-1.3, 1.8, 2.1 Knowledge: (CA) 1,4 (SC) 3,4 CAGLE: R.3.A (Gr. 5) SCGLE: SC3.2.Ba (Gr. 6) SC7.1.Aa-d; SC7.1.Ba-c; SC7.1.Da (Gr. 5) NETS: N/A DOK: 1-4	Photosynthesis (assessed using a scoring guide): • lab • diagram • discussion questions	• Elodea Photosynthesis lab • Photosynthesis lab sheets
(G) Observe and diagram the transpiration process in leaves Performance: 1.1-1.3 Knowledge: (CA) 1,4 (SC) 3,4 CAGLE: R.3.A (Gr. 5) SCGLE: SC7.1.Aa-d; SC7.1.Da (Gr. 5) NETS: (3-5) 8 DOK: 1-4	• Transpiration lab – assessed using a scoring guide • Transpiration Lab activity sheets – assessed using a scoring guide • Teacher: • observation • discussion	• Transpiration lab • Variety of plants: • geraniums • ivy • philodendron • Microscopes • Lab activity sheets • Hand lens