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| Timeline | Activities | Main Concepts | Assessment |
| Lesson 1  (step 1, 1 instructional period) | Discussing driving question  Constructing and sharing models of inheritance | * Plants can be parents * Baby plants often look and function similar to their parents * The way a plant looks and functions is determined by traits passed from its parents | **Activating prior knowledge** -  Exploration of student ideas about key concepts worked in previous lessons: life cycle, reproduction in plants, and seed components through a driving question  Initial student models to identify students’ prior conceptions. |
| Lesson 1  (step 2, 3 instructional periods) | Exploring traits in four corn varieties | * Organisms have multiple traits; some are similar to others, some are different | **Small group peer assessment**-  Group members identify one trait that is the same and one that is different from others in their group. |
| Creating a “new” corn plant with codes | * Inherited traits are determined by coded instructions * A seed is a carrier of coded instructions | **Peer assessment**-  Students review with a partner that corn plant drawings includes observable traits that match the selected codes in the seed. |
|  | Using my ideas about pollination in corn plants | * Coded instructions from parent plants are brought together during pollination | **Think-pair-share**-  Partners discuss what might happen in the offspring when corn plants with different traits pollinate one another. |
| Predicting traits in a new plant based on traits of parents’ plants | * Coded instructions come from both parent plants | **Assessment of student predictions**-  Teacher checks if students’ predictions that include traits inherited from both parent plants. |
|  | Revising models of inheritance based on new information | * Baby plants often look and function similar to their parents | **Assessment of student models**-  Teacher checks if students add additional elements to their models such as coded instructions or pollen to explain inheritance |
| Using model of inheritance to explain the driving question | * The way a plant looks and functions is determined by traits passed from its parents * Inherited traits are determined by coded instructions | **Summative assessment of student models-**  Students use their model of inheritance to explain if a pumpkin seed could ever grow into a corn plant. |
| Lesson 2  (step 3, 1 instructional period) | Create a “classroom cornfield” | * A corn plant is an individual, a population is made up of many corn plants. * Traits exist within a population. | **Whole group discussion**-  Students identify different traits in individual corn plants |
| Examining variation in the “classroom cornfield” | * Organisms have multiple traits, some are similar to others, some are different * Some traits are more common in a population than others | **Summative assessment of student graphs**-  Teacher evaluates if student graphs illustrate common and rare traits based on the “classroom cornfield”. |