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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 questionInitial 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”. |