

INSTRUCTIONAL SEQUENCE for the Long-Term Decomposition Project Jeremy Magee, Sandy High School Teacher <i>October 16, 2015</i>			
Day & Time Needed	Lesson Topics	Activities	Corresponding NGSS
Day 1 45 min.		<ul style="list-style-type: none"> Collect fresh leaves from the trees Start dehydrating leaves 	
Day 2 45 min.		<ul style="list-style-type: none"> Measure mass of leaves and create class set of decomposition bags Record data Place bags in the field 	
Day 3 50 min.	<ul style="list-style-type: none"> Introduce project and timeline 	<ul style="list-style-type: none"> Classroom presentation 	
Day 4 50 min.	<ul style="list-style-type: none"> Student Designed Experiment 	<ul style="list-style-type: none"> Students make two bags of their own, and record mass Students design their own experiment changing one variable 	
Day 5-6 (1 month later) 50 min.	<ul style="list-style-type: none"> Analyzing the loss in mass 	<ul style="list-style-type: none"> Collect two leaf litter bags and dehydrate (day 5) measure mass (day 6) Begin scatter graph Discuss loss of mass 	HS-LS2-3 HS-LS2-4 HS-LS2-5 HS-ESS2-6
Day 7-8 (1 month later) 15 min.	<ul style="list-style-type: none"> Analyzing the loss in mass 	<ul style="list-style-type: none"> Collect two leaf litter bags and dehydrate (day 7) measure mass (day 8) Continue scatter graph Look for patterns and discuss limitations to the data 	HS-LS2-3 HS-LS2-4 HS-LS2-5 HS-ESS2-6
Continue for the next 3 months			
Day 9 (After all bags have been collected) 45-90 min.	<ul style="list-style-type: none"> Review all of the data 	<ul style="list-style-type: none"> Finish scatter graphs Find best fit line (if possible) Determine the equation for the best fit line (if possible) Students compare their data to class set of data and to data from other schools 	HS-LS2-3 HS-LS2-4 HS-LS2-5 HS-ESS2-6

(Optional) 50-90 min.	<ul style="list-style-type: none"> Photosynthetic Pigment Lab 	<ul style="list-style-type: none"> Extract photosynthetic pigment from the leaves used in decomposition project 	HS-LS1-5
(Optional) Ongoing	<ul style="list-style-type: none"> Decomposition of Man-Made products 	<ul style="list-style-type: none"> Replicate lab with man-made projects instead of leaf litter. (This could be part of the student inquiry) 	HS-LS2-7
(Optional)	<ul style="list-style-type: none"> Leaf Calorimetry Lab 	Or <ul style="list-style-type: none"> Measure the heat released from dehydrated leaves Calculate chemical potential energy based on an estimate of carbon biomass in dehydrated leaves 	HS-LS2-3 HS-LS2-4 HS-LS2-5 HS-ESS2-6