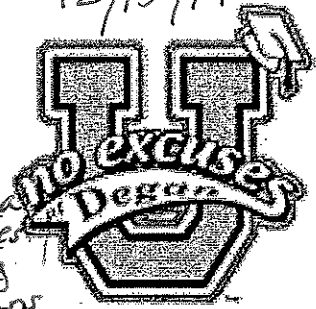# Degan Collaborative Planning
First Science

12/15/17

Readiness/Supporting:

1.7A observe, compare, describe, and sort components of soil by size, texture, and color

1.7B ID and describe a variety of natural sources of water, including streams, lakes & oceans

Process Standards:

1.7C gather ~~evidence~~ IDENTIFY of how rocks, soil, and water are used to make useful products

Tools to Know	Ways to Show
1.1(A) recognize and demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including wearing safety goggles, washing hands, and using materials appropriately	1.2(C) collect data and make observations using simple ~~equipment such as hand lenses, primary balances~~ tools
~~1.1(B) recognize the importance of safe practices to keep self and others safe and healthy~~	1.2(D) record and organize data using picture, numbers, and words
1.1(C) identify and learn how to use natural resources and materials, including conservation and reuse or recycling of paper, plastic, and metals	1.2(E) communicate observations and provide reasons for explanations using student-generated data from simple descriptive investigations
1.2(A) ask questions about organisms, objects, and events observed in the natural world	1.3(A) identify and explain a problem ~~such as finding a home for a classroom pet~~ and propose a solution ~~in his/her own words~~
1.2(B) plan and conduct simple descriptive investigations ~~such as ways objects move~~	
1.4(A) collect, record, and compare information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, notebooks, and safety goggles; timing devices, ~~including clocks and timers;~~ nonstandard measuring items ~~such as paper clips and clothespins;~~ weather instruments such as ~~classroom~~ demonstration thermometers and wind socks; and materials to support observation of habitats of organisms such as terrariums and aquariums	1.3(B) make predictions based on observable patterns
1.4(B) measure and compare organisms and objects using non-standard units	1.3(C) describe what scientists do

Content Objective:

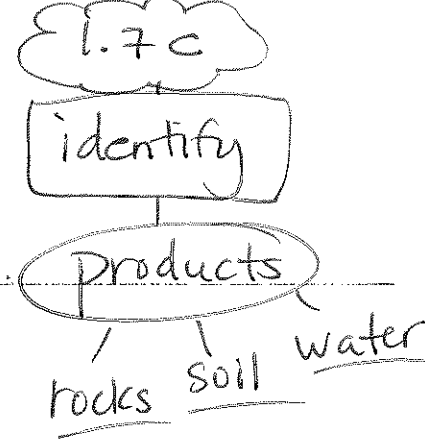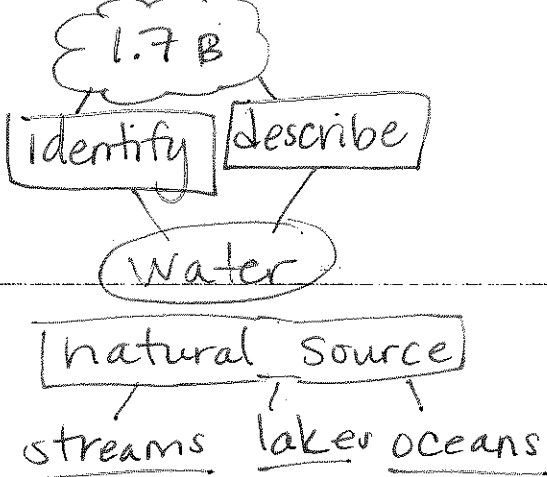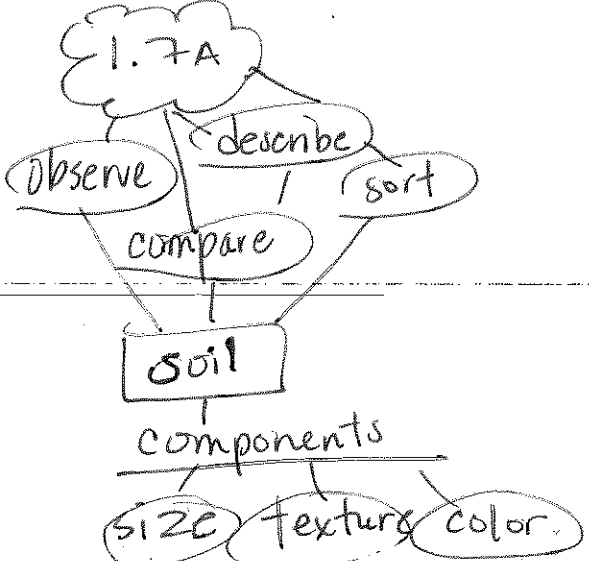TSW identify and describe water, rocks and soil.

Language Objective:

TSW orally discuss & record observations from science stations.

D & C Icons:

What is it we want students to know or be able to do?

1.7A — observe, describe, sort, compare → soil → components → size, texture, color

1.7B — identify, describe → water → natural source → streams, lakes, oceans

1.7C — identify → products → rocks, soil, water

Applicable Data and Vertical Implications:

Hess' Cognitive Rigor Matrix & Curricular Examples – Math/Science

Revised Bloom's Taxonomy	Webb's DOK Level 1 Recall & Reproduction	Webb's DOK Level 2 Skills & Concepts	Webb's DOK Level 3 Strategic Thinking/Reasoning	Webb's DOK Level 4 Extended Thinking
Remember Retrieve knowledge from long-term memory, recognize, recall, locate, identify	• Recall, observe, & recognize facts, principles, properties • Recall/identify conversions among representations or numbers (customary and metric measures)			
Understand Construct meaning, clarify, paraphrase, represent, translate, illustrate, give examples, classify, categorize, summarize, generalize, infer a logical conclusion, predict, compare, contrast, explain, construct models	• Evaluate an expression • Locate points on a grid or number on a number line • Solve a one-step problem • Represent math relationship in words, pictures, or symbols • Read, write, compare decimals in scientific notation	• Specify and explain relationships (cause –effect) • Make and record observations • Explain steps followed • Summarize results or concepts • Make basic inferences or logical predictions from data/observations • Use models/diagrams to represent or explain mathematical concepts • Make and explain estimates	• Use concepts to solve non-routine problems • Explain, generalize, or connect ideas using supporting evidence • Make and justify conjectures • Explain thinking when more than one response is possible • Explain phenomena in terms of concepts	• Relate mathematical or scientific concepts to other content areas, other domains, or other concepts • Develop generalizations of the results obtained and the strategies used (from investigation or reading) and apply them to new problem situations
Apply Carry out or use a procedure in a given situation; carry out (apply to a familiar task), or use (apply) to an unfamiliar task	• Follow simple procedures (recipe-type directions) • Calculate, measure, apply a rule (rounding) • Apply algorithm or formula (area or perimeter) • Solve linear equations • Make conversions among representations or numbers, or within and between customary and metric measures	• Select a procedure according to criteria and perform it • Solve routine problem applying multiple concepts or decision points • Retrieve information from a table, graph, or figure and use it to solve a problem require multiple steps • Translate between tables, graphs, words, and symbolic notations (e.g. graph data from a table) • Construct models given criteria	• Design investigation for a specific purpose or research question • Conduct a designed investigation • Use concepts to solve non-routine problems • Use & show reasoning, planning & evidence • Translate between problem & symbolic notation when not a direct translation	• Select or devise approach among many alternatives to solve a problem • Conduct a project that specifies a problem, identifies solution paths, solves the problem, and reports results
Analyze Break into constituent parts, determine how parts relate, differentiated between relevant-irrelevant, distinguish, focus, select, organize, outline, find coherence, deconstruct	• Retrieve information from a table or graph to answer a question • Identify whether specific information is contained in graphic representations (table, graph, T-chart, diagram) • Identify a pattern/trend	• Categorize, classify materials, data, figures based on characteristics • Organize or order data • Compare/contrast figures or data • Select appropriate graph and organize & display data • Interpret data from a simple graph • Extend a pattern	• Compare information within or across data sets or texts • Analyze and draw conclusions from data, citing evidence • Generalize a pattern • Interpret data from complex graph • Analyze similarities/difference between procedures or solutions	• Analyze multiple sources of evidence • Analyze complex/abstract themes • Gather, analyze, and evaluate information
Evaluate Make judgments based on criteria, check, detect inconsistencies or fallacies, judge, critique			• Cite evidence and develop a logical argument for concepts or solutions • Describe, compare, and contrast solution methods • Verify reasonableness of results	• Gather, analyze & evaluate information to draw conclusions • Apply understanding in novel way, provide argument or justification for application
Create Reorganize elements into new patterns or structures, generate, hypothesize, design, plan, construct, produce	• Brainstorm ideas, concepts, or perspectives related to a topic	• Generate conjectures or hypotheses based on observations or prior knowledge and experience	• Synthesize information within one data set, source, or text • Formulate an original problem given a situation • Develop a scientific/mathematical model for a complex situation	• Synthesize information across multiple sources or texts • Design a mathematical model to inform and solve a practical or abstract situation

Adapted from © 2009 Karin Hess

How will we know if they know it?
TSW identify and describe sources of water, rocks and soil.

What do we do if students have not learned (pre-requisite skills)?
More exploration time

What do we do if students have already shown mastery (extended learning)?
Create presentation on Google Slides
Research other examples

Guided questions:
1. How are they alike & different?
2. How could you sort/categorize these?
3. What products can be made with ___?
4. Why do they use ___ to make ___?
5. How could you describe this soil?

Suggested Materials:
Soil samples
hand lenses
water samples
picture cards