CORE NON-NEGOTIABLES

SCIENCE

The list below outlines district expectations regarding the district's SCIENCE programs in grades K-12. The items are the focus of the 2013-2014 school year and define the areas of focus of district- and school-level walk-throughs.

1. District-approved and adopted programs (e.g. FOSS, CPO, PSI, etc.) are to be used as the **primary** instructional supports; making use of all essential components.

2. Teachers are to follow the district-approved Scope and Sequence for their respective grade level(s). Teachers, as much as possible, should stay "on grade level" – using their understanding of students' "entry points" and readiness to appropriately scaffold instruction. *See* http://www.orange.k12.nj.us/Page/7131

3. Limit time spent on Do Now's and Homework checks to 7 minutes.

4. Begin every lesson with a pre-planned Introductory Task that serve as the starting point/launch for the referenced standard that is diagnostic, prerequisite or anticipatory in nature.

5. AVOID teacher-generated tasks; Use tasks from the district's approved web resource list (see program guides and/or scope and sequence guides).

6. Instruction should be anchored around carefully "selected" (not teacher-made) activities/investigations and tasks that promote conceptual understanding and scientific inquiry. Science instruction should follow a design to provide multiple opportunities for exposure to science concepts. The design should include the following pedagogies: Active investigation; (including outdoor experiences); recordings in science notebooks; reading and comprehension of information text and assessment to monitor progress and motivate student reflection on learning.

7. Anchor objectives in the New Jersey Core Curriculum Content Standards (Grades K-12) and Common Core State Standards (Grades 6-12); carefully unpacking each standard to ensure that the objective reflects the meaning, depth, and breadth of the standard.

8. Conceptual Development should occur "before" the procedural skill is addressed. Concepts should ALWAYS be introduced via a concrete or pictorial representation.

9. Physical Board Plans (e.g. date, **3-part Objective**, **written CCSS** beyond the notation, **Do Now**, **Introductory Task**, key academic vocabulary for the day, journal question, DOL, etc.) should be set up before students enter the classroom. A demonstration of learning MUST accompany every objective.

10. Whole group instruction should be evident – serving the purpose of (1) identifying and treating potential misconceptions (initial part of the lesson); (2) summarizing individual work and solidifying understandings (3) completion of the Demonstration of Learning (end of lesson).

9a. When using small groups for science instruction, teachers should:

- choose tasks that deal with important science concepts and ideas;
- select tasks that are appropriate for group work;
- consider having students initially work individually on a task and then follow this with group work where students share and build on their individual ideas and work;
- give clear instructions to the groups and set clear expectations for each;
- emphasize both group goals and individual accountability;
- choose tasks that students find interesting;
- ensure that there is closure to the group work, where key ideas and methods are brought to the surface either by the teacher or the students, or both.

10. All students must use and maintain a science notebook as an embedded part of science instruction.