

Science Standards Revision



January 23, 2017

Housekeeping

1. Sign in
2. Parking validation
3. Restrooms
4. Breaks/Lunch
6. Travel Questions – Fill out W9 if needed
7. Sign non-disclosure form – All members

Cell phones should only be used during breaks and lunch. If you need to take a call, please go to the break room. Please check text and email only during break due to non-disclosure.

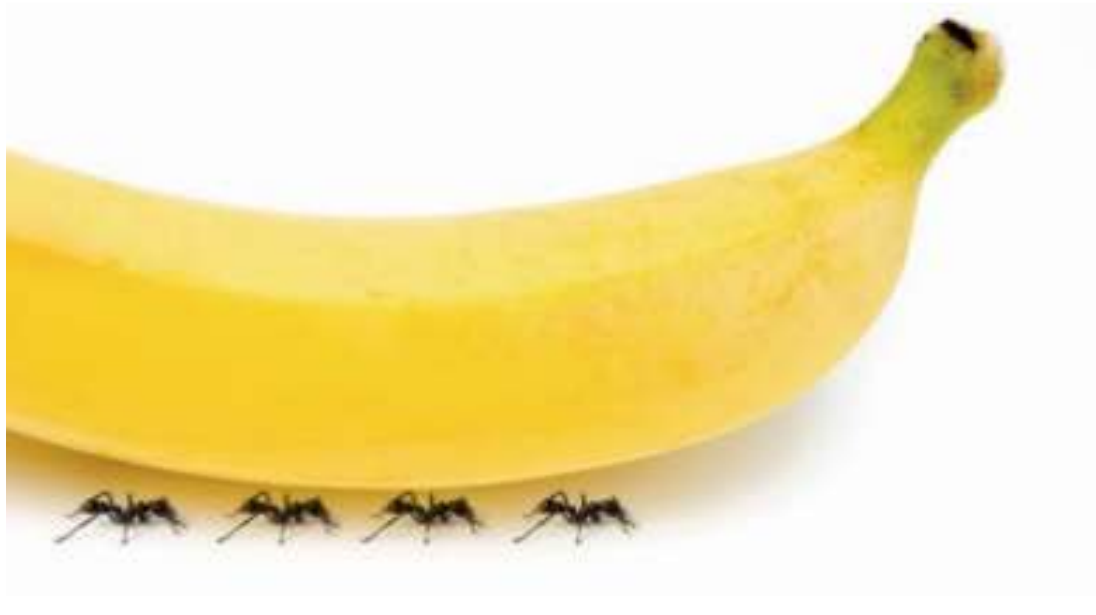
MAHATMA (1869-1984) GANDHI

**THE FUTURE
DEPENDS ON
WHAT YOU DO
TODAY.**

Thank you!!!

If everyone is moving forward together, then success takes care of itself.

~ Henry Ford

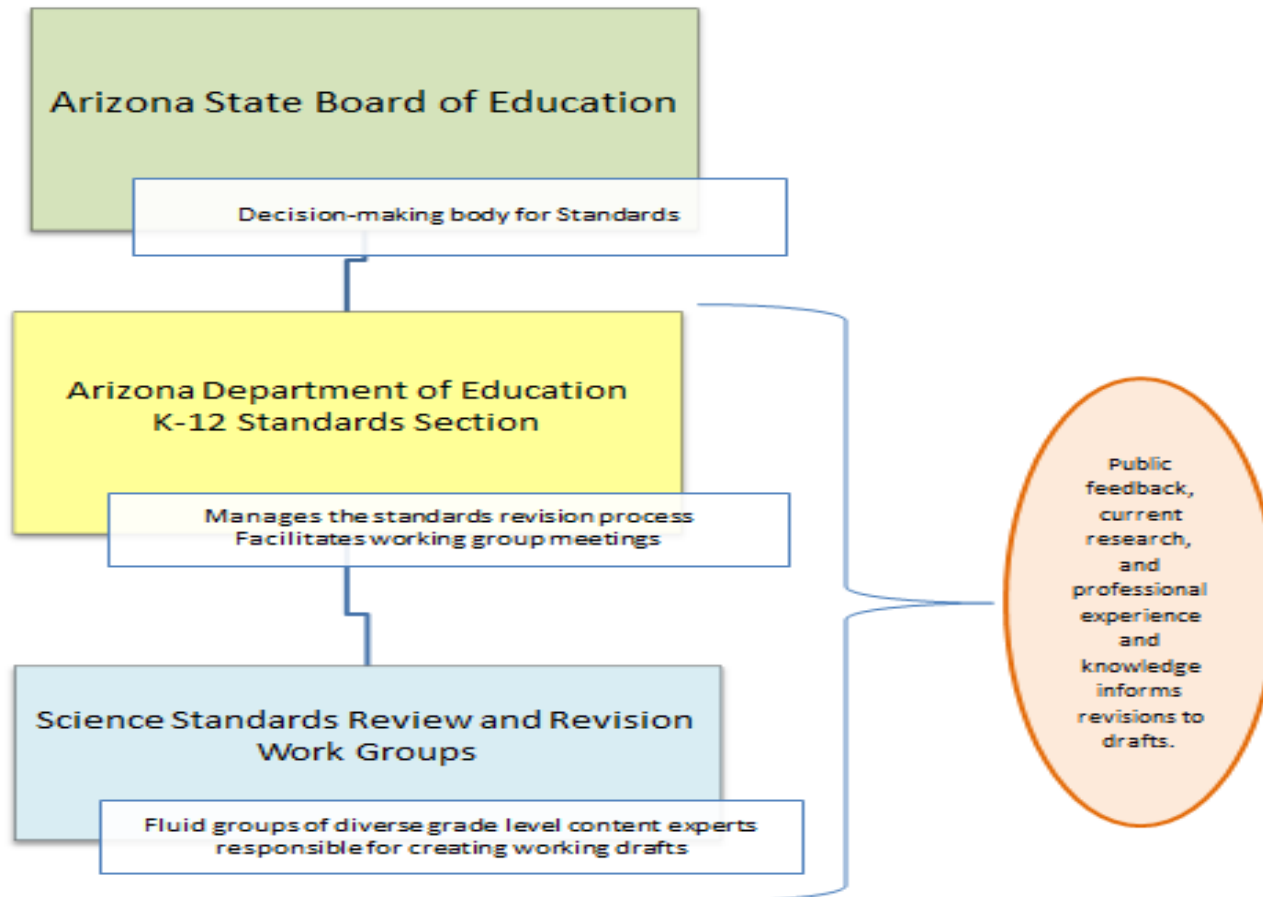


Introductions

Introduce yourself by telling everyone in the group:

1. Your name
2. Your school/district
3. Your current position

Standards Review - Structure



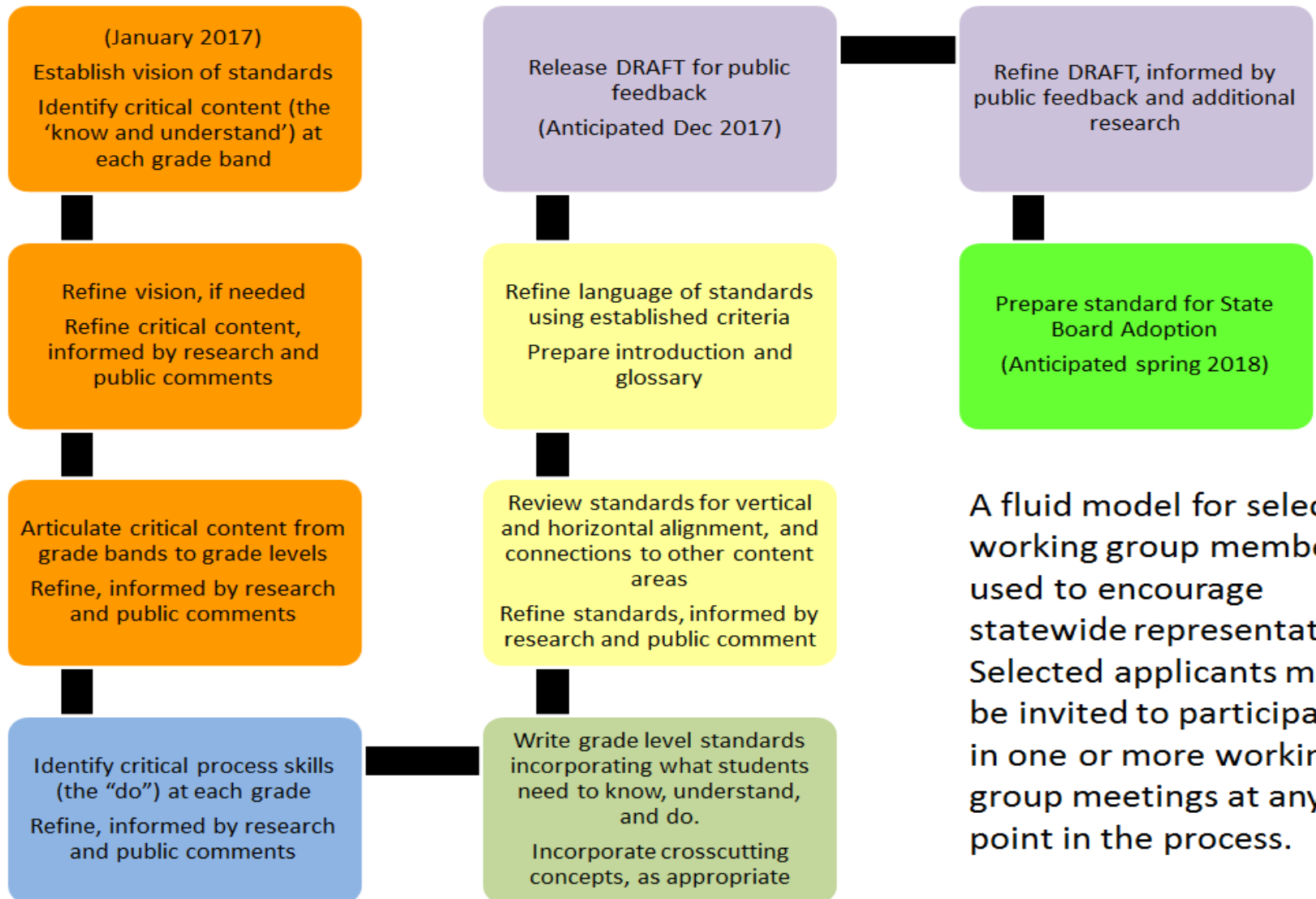
Roles/Responsibilities: ADE K-12 Standards Staff

ADE K-12 Standards Members

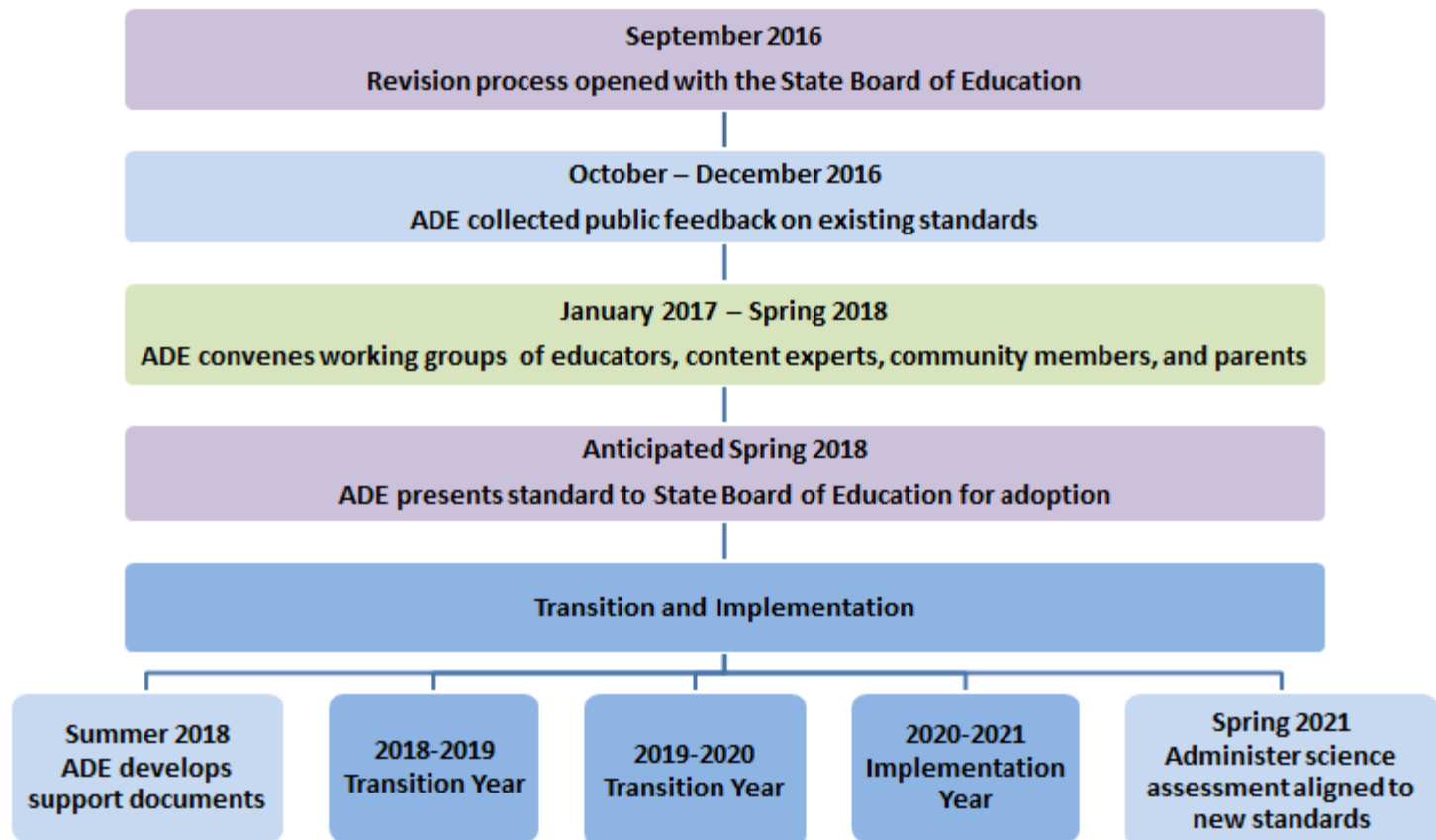
- Facilitate work group meetings
- Provide meeting goals, agendas, tasks, and instructions
- Provide needed materials
- Organize committee members into vertical, horizontal, and/or content groups, as appropriate.

Standards Review - Structure

Overview of Process for Science Standards Working Groups



Science Standard Revision and Implementation Timeline



Structure: Working Groups

Use a fluid membership model (“accordion model”) to include multiple voices and perspectives throughout the process

- K-12 teachers, coaches, curriculum directors, administrators
- Higher education: science education and science content instructors, professors, and/or researchers
- Content experts from the community
- Parents

Roles/Responsibilities: Working Groups

- 1. Develop the vision for the revised Science Standards**
- 2. Write the revised Science Standards**
 - Make decisions about content and structure of grade level standards
 - Apply content knowledge, grade-level expertise, research, and public feedback to inform all decisions
- 3. Develop drafts of K-12 Science Standards, including an introduction, glossary, and other appendices, as needed**

Working Group Norms

- Actively engage in all discussions
- Be open-minded
- Have an attitude that fosters collaboration, agreement, and consensus
- Be mindful of timelines and scope of work
- **Cell phone/email checks are limited to breaks (non-disclosure)**

Questions on Structure



ADE Directive for the Science Standards

- Arizona standards, written for Arizona teachers and students, by Arizona educators and content experts
- Write grade-level standards and not performance objectives

Standards, Curriculum, & Instruction

Standards – What a student needs to know, understand, and be able to do by the end of each grade. Standards build across grade levels in a progression of increasing understanding and through a range of cognitive demand levels. Standards are adopted at the state level by the State Board of Education.

Standards, Curriculum, & Instruction

Curriculum – The resources used for teaching and learning the standards. Curricula are adopted at a local level by districts and schools.

Instruction – The methods used by teachers to teach the standards. Instructional techniques are employed by individual teachers in response to the needs of the students in their classes to help them progress through the curriculum in order to master the standards.

Standards versus Performance Objectives

Content Standards

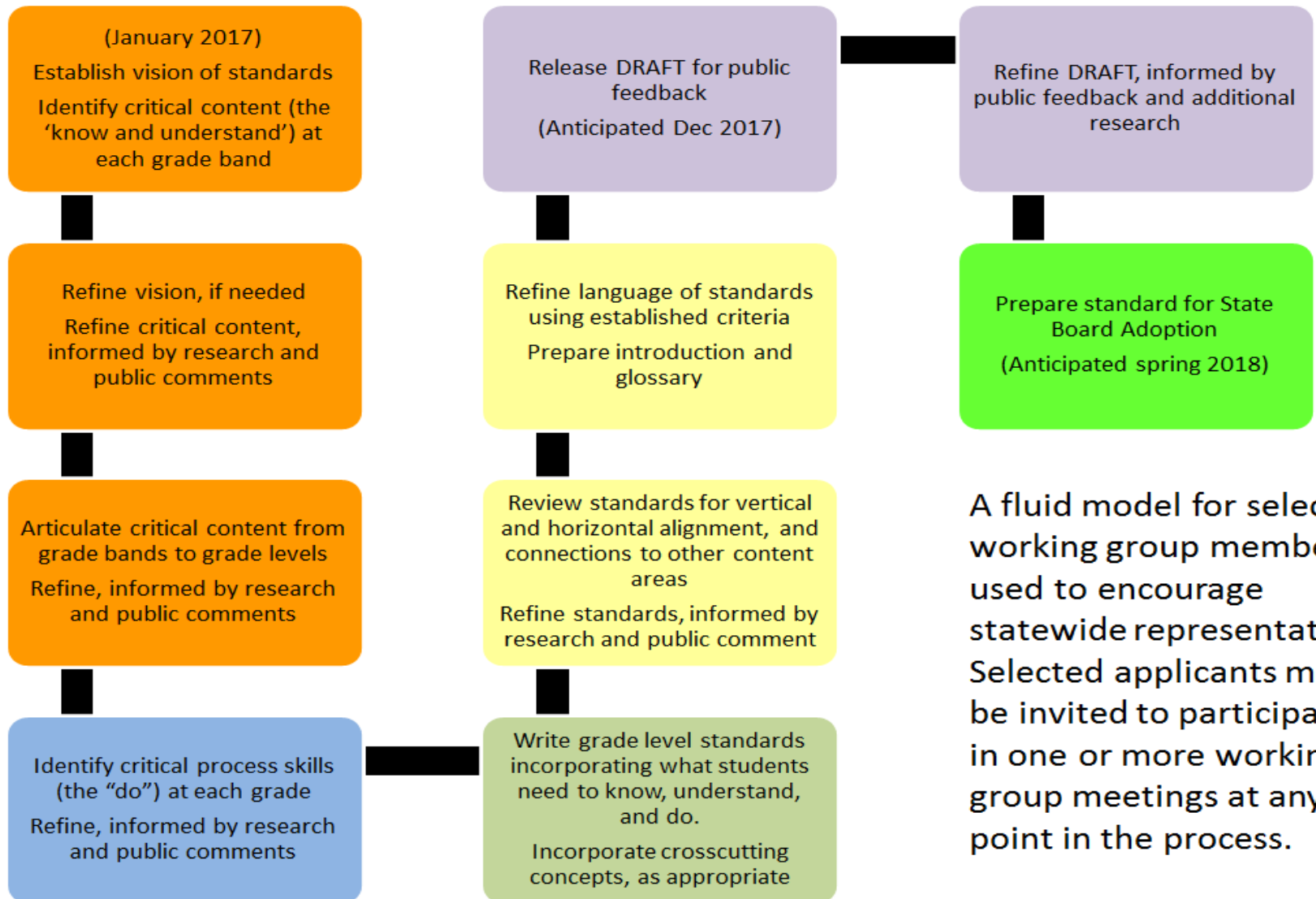
Standards are what students need to know, understand, and be able to do **by** the end of each grade level. Standards build across grade levels in a progression of increasing understanding and through a range of cognitive demand levels.

Performance Objectives

Performance Objectives are **incremental steps** toward mastery of individual content standards. Performance Objectives are knowledge and skills that a student must demonstrate at each grade level. Performance objectives do not imply a progression of learning and, because they are discrete skills, reach a limited level of cognitive demand.

Standards Review - Structure

Overview of Process for Science Standards Working Groups



A fluid model for selecting working group members is used to encourage statewide representation. Selected applicants may be invited to participate in one or more working group meetings at any point in the process.

Establishing the Vision

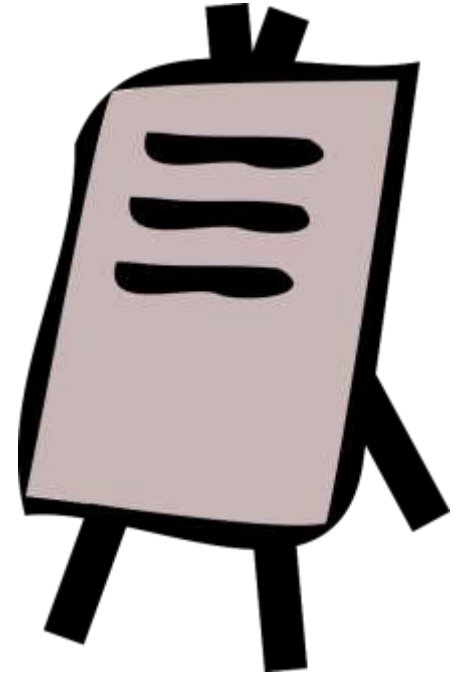
- Read the introduction to the current standard (individually)
- Highlight important statements
- Grade-band discussions about important ideas and any missing ideas
- Whole room discussion

Establishing the Vision

- Compare room ideas to vision outlined in A Framework for K-12 Science Education.
- Whole room discussion about important ideas and any missing ideas
- Whole room consensus on key aspects of the vision for the new (draft) science standard

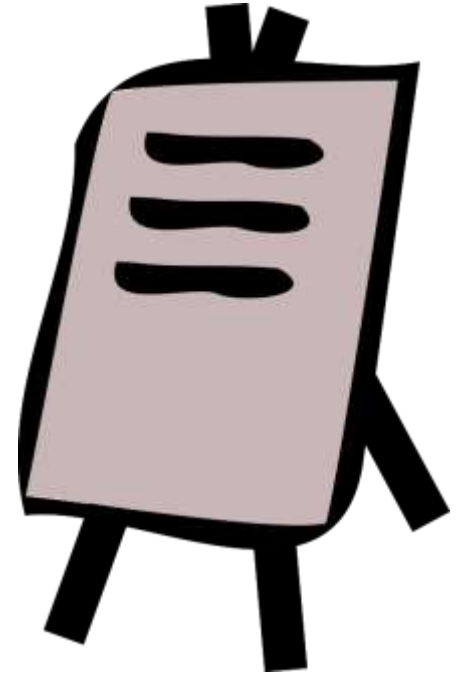
Identify Critical Content

- Work in grade band groups
(K-2, 3-5, 6-8, HS)
- Identify critical content for students to know and understand
- Chart on poster paper



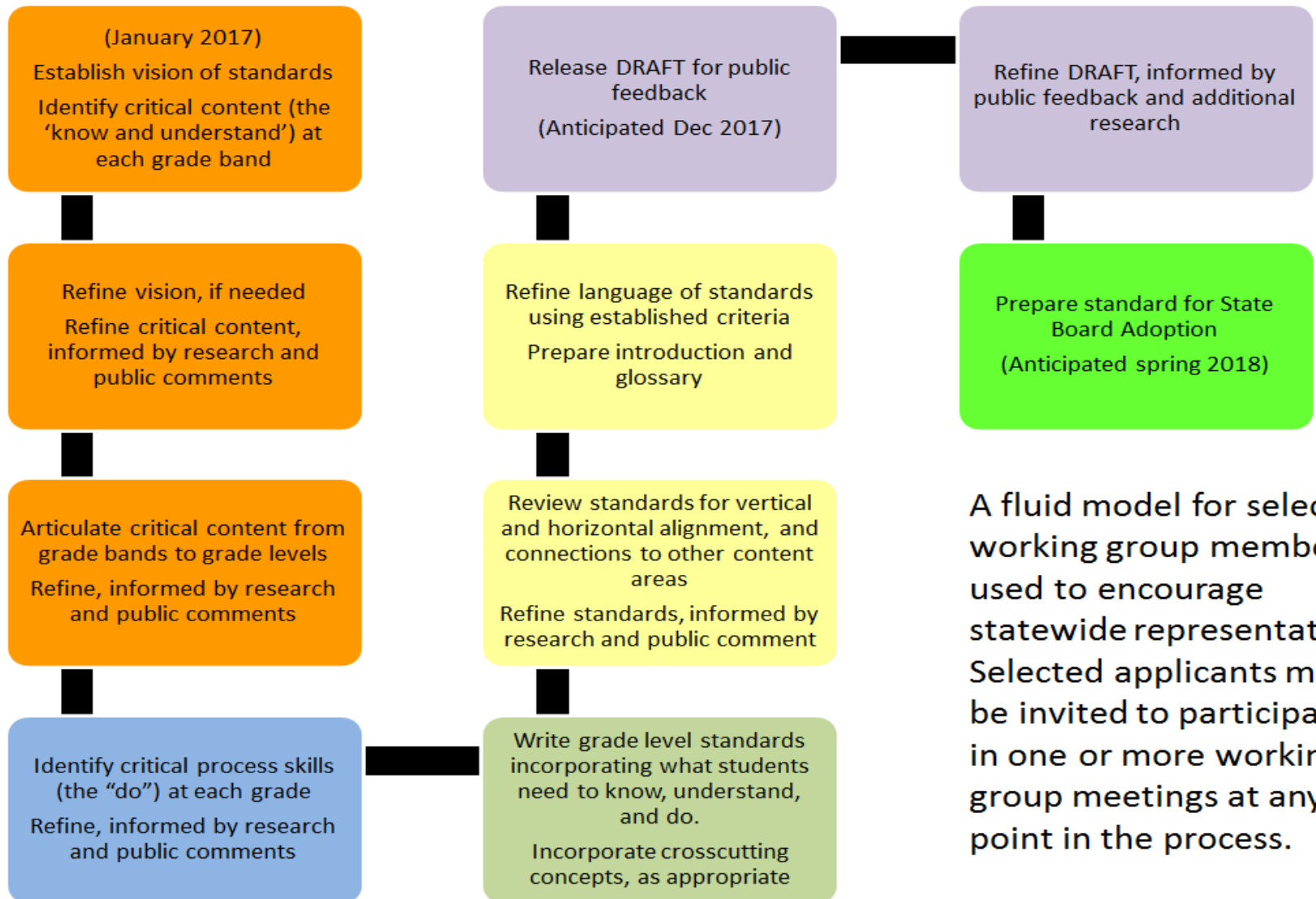
Identify Critical Content

- Break into content area groups (Life, Earth, Physical) with representation from each grade band)
- Identify progression of critical content from K-HS
- Whole room discussion to refine progressions



Wrap-up and Next Steps

Overview of Process for Science Standards Working Groups



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Thank you!

THANKS A

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