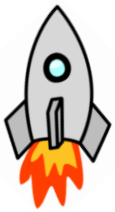
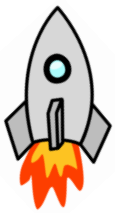
Lift-Off For Teachers and Youths 2011



UW Oshkosh, Science Outreach

Wisconsin Space Grant Consortium

Interactive Science Notebooks



What Are Science Notebooks?

- Record of student findings, questions, thoughts, procedures, data, and wonderings
- Personal to the owner
- Science lesson organizer
- Process/reflection
- Formative assessment tool
  - Content
  - Process skills
  - Methods of recording

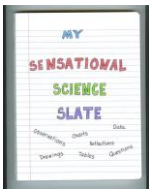
Key Ideas

- Interactive journaling will make a difference!
- Students are actively engaged in thinking and communicating.
- Students feel "ownership" because they are creating meaningful knowledge for themselves.

- There's no "right" or "wrong" way.
- Modify to find ways that work best for you and your students.

Setting up a Science Notebook

- Label the cover/create a unique cover
- Number the pages
  - Blue/black ink
  - Right side pages = odd numbers
  - Left side pages = even numbers



What Goes Where?

- No "right" answer.
- Table of Contents
  - New table for new unit?
  - Where does it fit best for you?

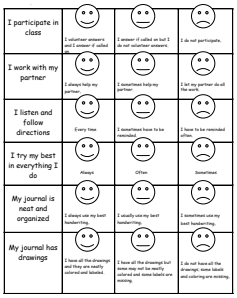
INTERACTIVE SCIENCE NOTEBOOK
TABLE OF CONTENTS

Notebook Name _____ Unit Title _____

Left Side	Page	Right Side	Page

Science Notebook Rubric

- Outlines notebook expectations
  - Parents, students
  - Several versions
  - What works in your classroom



I participate in class	I volunteer answers and I answer if called on.	I answer if called on but I do not volunteer answers.	I do not participate.
I work with my partner	I always help my partner.	I sometimes help my partner.	I let my partner do all the work.
I listen and follow directions	Every time	I sometimes have to be reminded	I have to be reminded often.
I try my best in everything I do	Always	Often	Sometimes
My journal is neat and organized	I always use my best handwriting.	I usually use my best handwriting.	I sometimes use my best handwriting.
My journal has drawings	I have all the drawings and they are neatly colored and labeled.	I have all the drawings but some may not be neatly colored and some labels are missing.	I do not have all the drawings; some labels and coloring are missing.

More Key Ideas

- A “left-side, right-side” orientation to help students record, organize, and process new information.
  - Right side = facilitated learning
  - Left side = metacognition (higher level thinking)
- Students are expected to continually reflect and show evidence of this reflection through “left hand” assignments.

What kind of information goes on each side of the notebook?

LEFT SIDE - OUTPUT

- Individual questions
- Brainstorming diagrams
- Making connections
- Graphing
- Self reflections
- Poems/songs
- Summary/Conclusions
- Big ideas/apply to the real world

RIGHT SIDE - INPUT

- Key questions
- Key words/vocabulary
- Hypotheses
- Procedures
- Labs/Observations
- Data
- Handouts/worksheets with new information
- Class notes

Why Use Interactive Science Notebooks?

- Improve organization skills
  - A concrete record of reflection, assessment, and connections
- Improve critical thinking skills
- Express understanding creatively
- Connect student thinking and experiences with science concepts
- Engage students
- Provide opportunities for all students

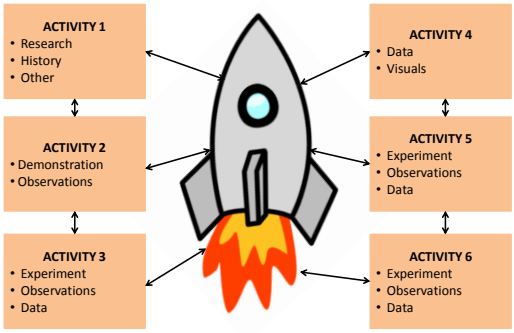
Why Interactive Student Notebooks Engage Students?

- Students use both their visual and linguistic intelligences
- Note taking becomes an active process
- Notebooks help students to systematically organize as they learn
- Notebooks become a portfolio on individual learning

Aha Connections Page

- In the center "light bulb" is your problem statement, question or big idea.
- After each day/activity, you will be asked to write a statement that conveys the concepts learned.
- Notice trends or connections. Use arrows or color to show those trends or connections visually (making connections to the Aha problem, other lab(s), or both).
- Use this page as evidence to later write your Aha Thesis.

Rocket Connections Page



Effective Instructional Strategy

Current Instruction Method

- Taking notes during lecture
- Cooperative learning
- Questioning
- Generating and testing hypotheses
- Nonlinguistic representation
- Recognition of effort

Using Science Notebooks

- Take notes during lecture, summarize
- Work in partners/teams