Writing Curriculum in the Age of the Internet

Anna Clarke and Sarah Baird

Our Schools

Lakeland Montessori Middle

Charter

Age 3-8th Grade

Sea Pines Academy

Private

Ages 3-8th Grade

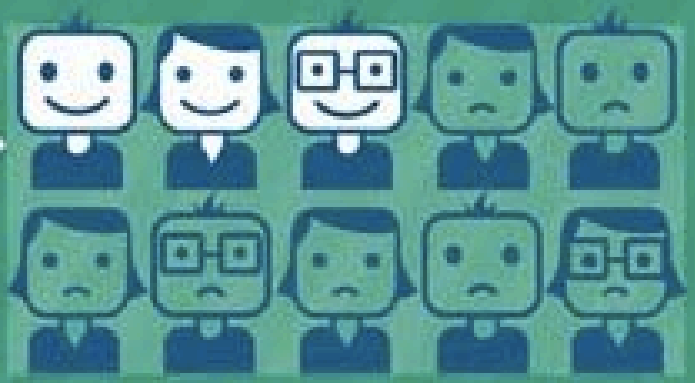
Courtesy, Mandarin Museum and Historical Society

Measuring the world's digital natives

who are the digital natives?

Young and connected: 15-24 year olds with 5 or more years of online experience

30% OF THE WORLD'S YOUTH HAVE BEEN ONLINE FOR AT LEAST FIVE YEARS



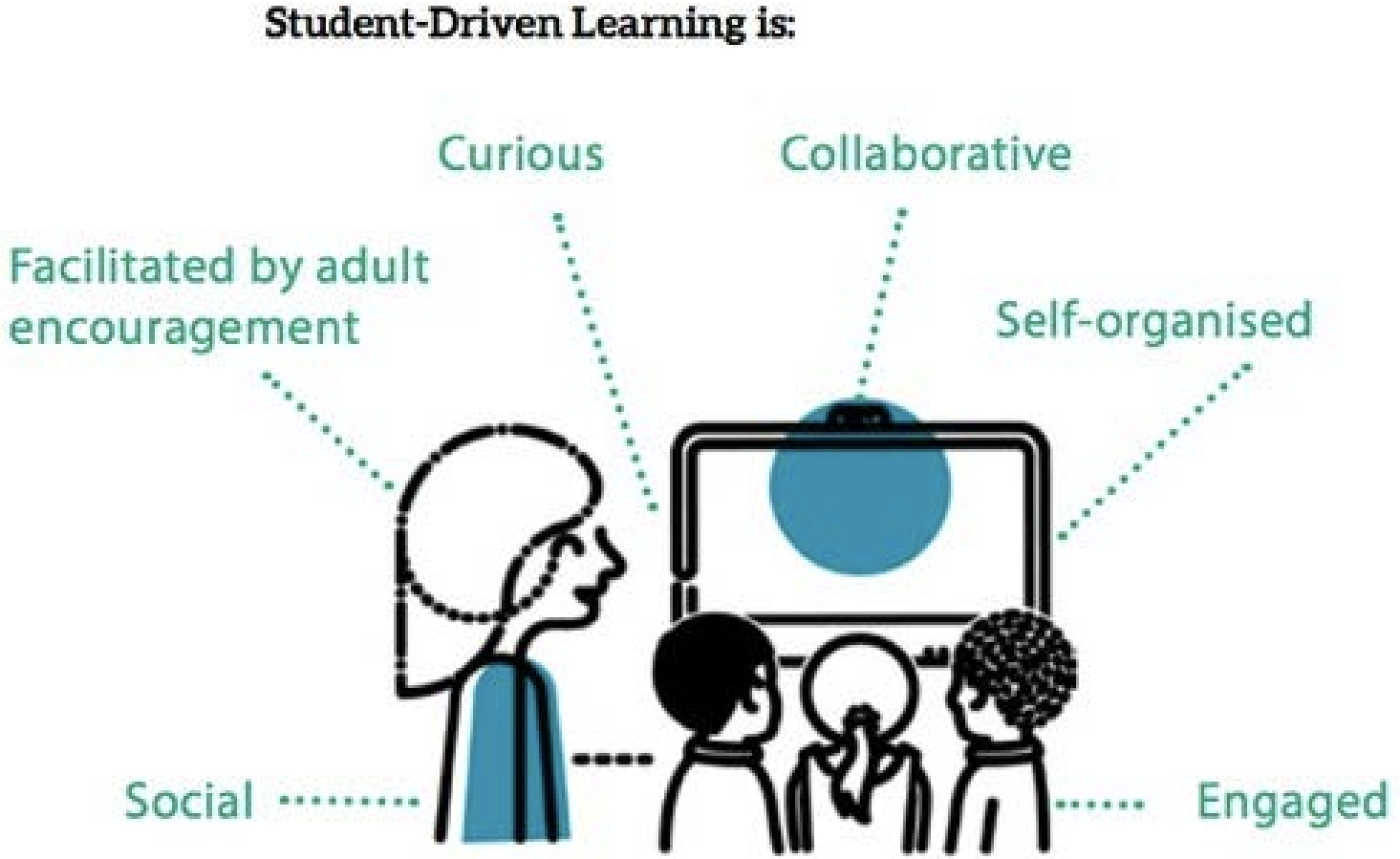
OUT OF A WORLD POPULATION OF **7 BILLION**

363 MILLION ARE DIGITAL NATIVES

...WHICH CORRESPONDS TO ONLY **5.2%** OF THE WORLD POPULATION

The pull of the internet on our teaching

The internet as curator and teacher



Montessori Education

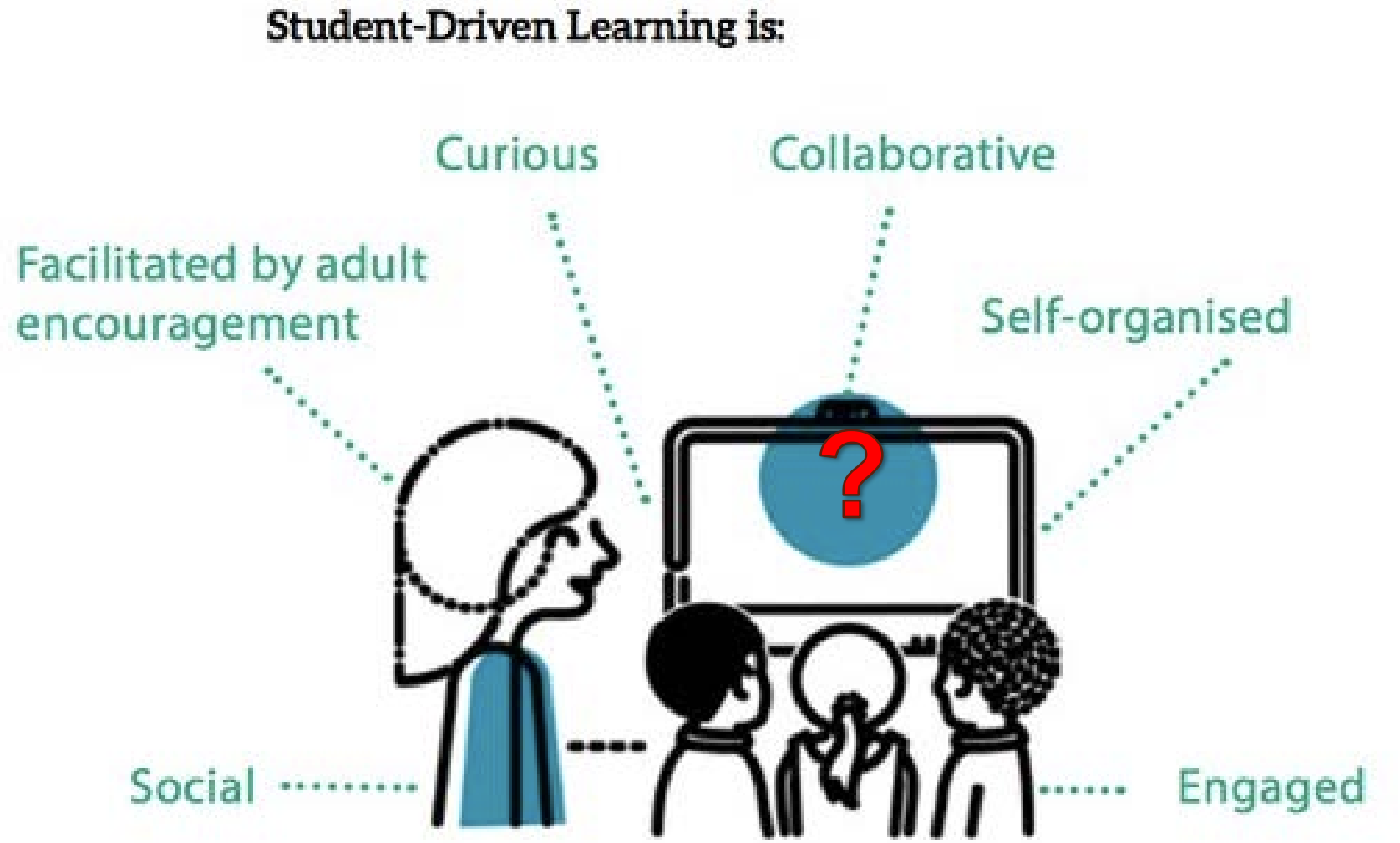
- Takes place in a prepared environment
- Educates for peace
- Recognizes the different developmental needs of the child
- Provides sensorial materials.
- Provides lessons in practical life.
- Provides access to the natural world.
- Recognizes the spiritual and aesthetic needs of the child.
- Sees tactile experience and interpersonal experience as essential to healthy development.
- Shares a vision of students as intrinsically primed to learn and to organize their learning.

“According the Clayton Christensen Institute—a nonprofit, nonpartisan think tank that touts "disruptive innovation"—the number of K-12 students who took an online course increased from roughly 45,000 in 2000, to more than 3 million in 2009. The institute also projects that half of all high-school classes will be delivered online by 2019.”

45,000

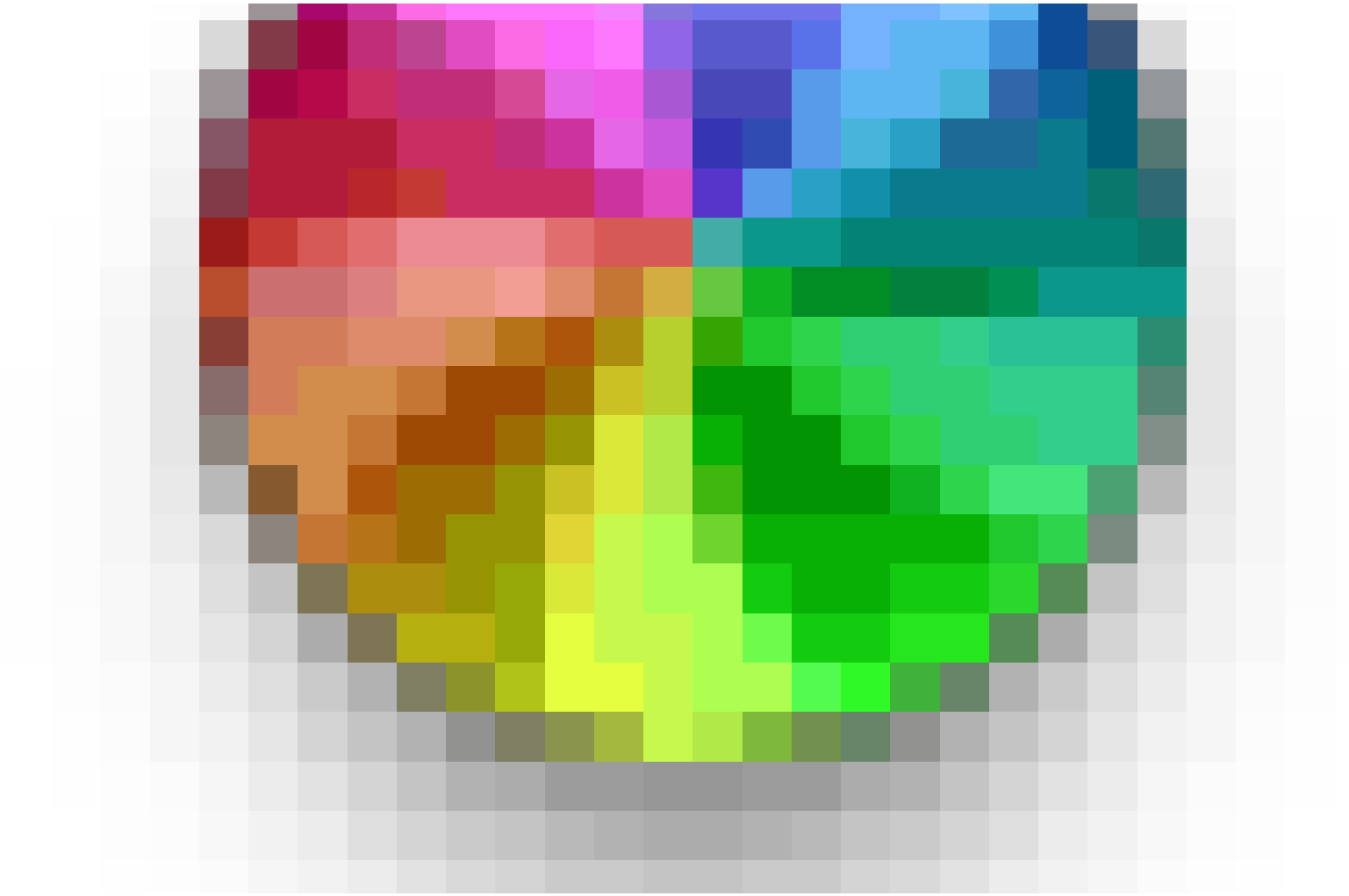
2,000,000,

The internet as curator and teacher



My prep time: How much time am I online? Should I be?

Limited Bandwith



Know what you are looking for

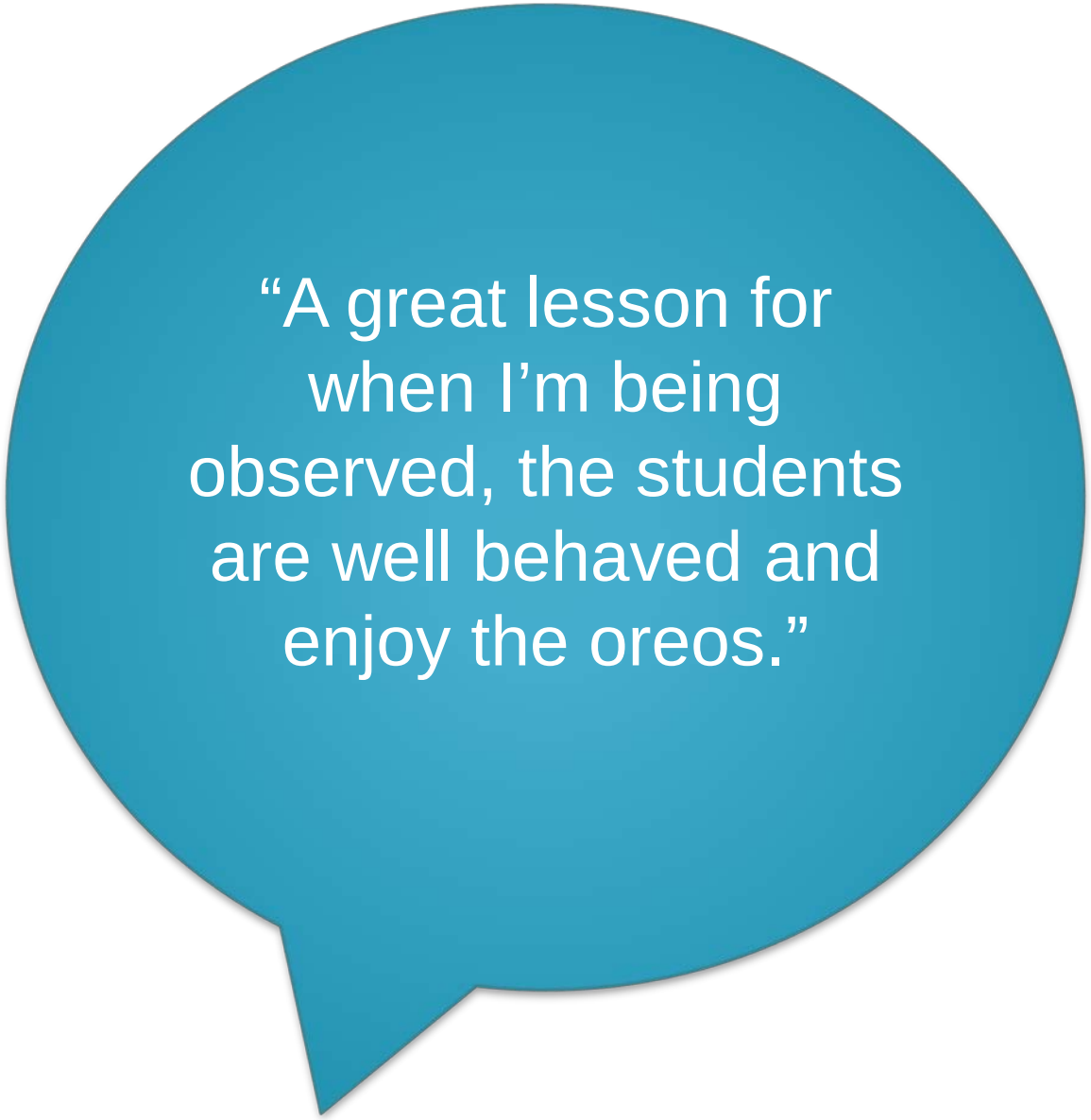
- What resources are needed in a Montessori environment
- Where to look
- Knowing the overlaps and distinctions between Montessori and other progressive education movements.
- Using your Montessori-fu to evaluate materials.

Checklist

- ❑ Design supports learning concept
- ❑ Developmentally appropriate
- ❑ Supports student's autonomy
- ❑ A few procedures, applicable to many outcomes.
- ❑ Self-correcting
- ❑ Helps student to organize knowledge
- ❑ Part of 3 Period Lesson
- ❑ Multi-age
- ❑ In the world
- ❑ Peace making

Pinterest


OREO MOON PHASES
Oreo Cookie Moon Phases
NEW MOON
WAXING CRESCENT
WAXING HALF (FIRST QUARTER)
WAXING GIBBOUS
FULL MOON
WANING GIBBOUS
WANING HALF (LAST QUARTER)
WANING CRESCENT
A TASTY SCIENCE ACTIVITY
www.sciencebob.com


“A great lesson for when I’m being observed, the students are well behaved and enjoy the oreos.”

Teachers Pay Teachers

About Us | For Schools | Gift Cards | Help

All Categories | SEARCH | Log In | Not a member? Join for Free | Cart

FEATURED

- Spring
- Women's History Month
- St. Patrick's Day
- Winter
- Math
- Science
- English Language Arts
- Tools for Common Core
- Not Grade Specific
- Free Downloads
- On Sale This Week

GRADES

- PreK - K
- 1 - 2
- 3 - 5
- 6 - 8
- 9 - 12
- Other

SUBJECT

OUR TEACHER-AUTHORS

See All ▸

Meet

Meet

Meet

Meet

Diamante Poem

A diamante poem is used to compare and contrast. It should be written in the shape of a diamond. See "Poetry Helpful Hints".

Line 1: Topic 1
Line 2: Two words to describe Topic 1
Line 3: Three action words (-ing) about Topic 1
Line 4: A four or five word phrase describing both topics – what they have in common (A complete thought but not necessarily a complete sentence.)
Line 5: Three action words (-ing) about Topic 2
Line 6: Two words to describe Topic 2
Line 7: Topic 2

Checklist

- ❑ Design supports learning concept
- ❑ Developmentally appropriate
- ❑ Supports student's autonomy
- ❑ A few procedures, applicable to many outcomes.
- ❑ Self-correcting
- ❑ Helps student to organize knowledge
- ❑ Part of 3 Period Lesson
- ❑ Multi-age
- ❑ In the world
- ❑ Peace making

Interactive Notebook Guidelines

The purpose of the interactive notebook is to:

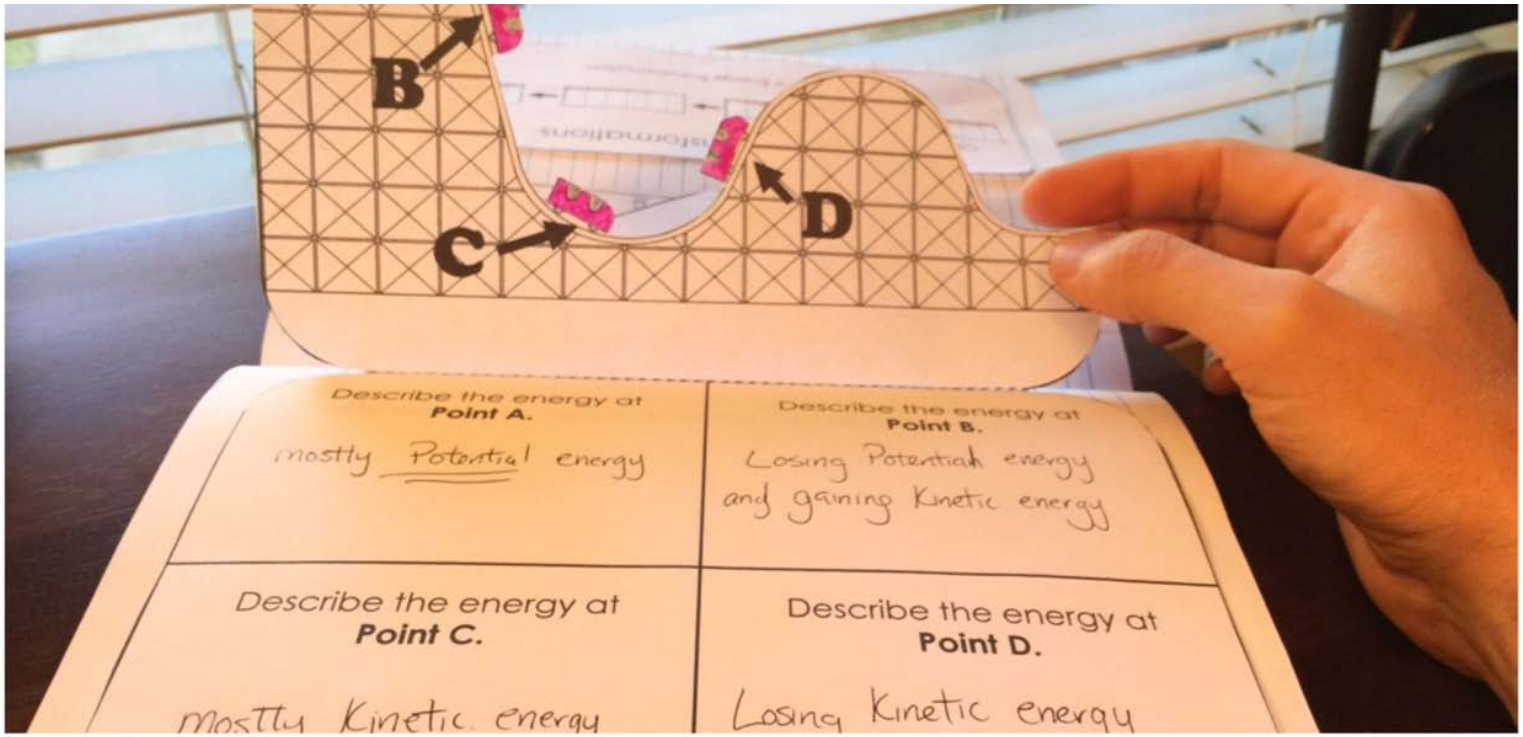
- Involve students in "making sense" of their notes visually.
- Develop student nonfiction reading and note-taking skills.
- Teach students "approaches to learning" that will prepare them for success in school!

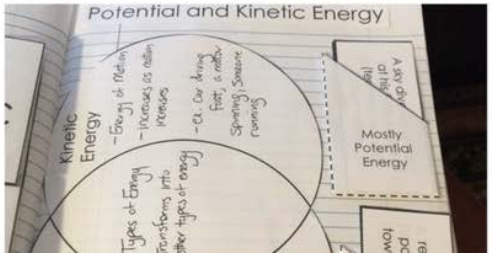
Notebook Organization

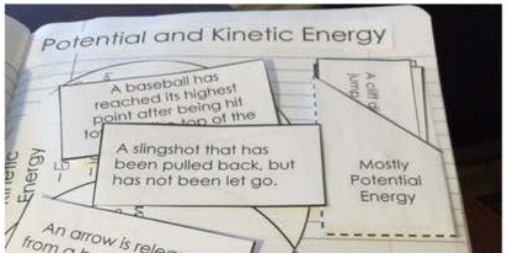
LEFT IS FOR LEARNING **Teacher Guides Information**	**RIGHT IS FOR REFLECTION** **Students Process Information**
The left side is teacher guided – it contains "testable" information Notes Handouts Book Assignments	The right side helps you make sense of the left-side information These assignments will help you deepen your understanding of the left-side information.

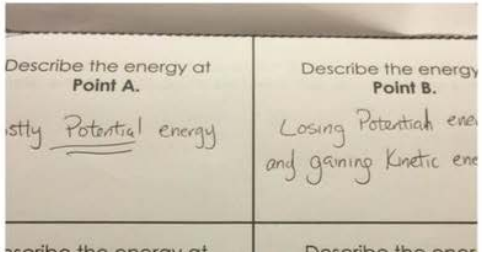
Checklist

- ❑ Design supports learning concept
- ❑ Developmentally appropriate
- ❑ Supports student's autonomy
- ❑ A few procedures, applicable to many outcomes.
- ❑ Self-correcting
- ❑ Helps student to organize knowledge
- ❑ Part of 3 Period Lesson
- ❑ Multi-age
- ❑ In the world
- ❑ Peace making


B
C
D
Describe the energy at Point A.
mostly Potential energy
Describe the energy at Point B.
Losing Potential energy and gaining Kinetic energy
Describe the energy at Point C.
mostly Kinetic energy
Describe the energy at Point D.
Losing Kinetic energy


Potential and Kinetic Energy
Kinetic Energy
Mostly Potential Energy


Potential and Kinetic Energy
A baseball has reached its highest point after being hit
A slingshot that has been pulled back, but has not been let go.
Mostly Potential Energy


Describe the energy at Point A.
Describe the energy Point B.
Losing Potential ene
and gaining Kinetic ene

Measurement Centers: Very Hands-On!

Subjects	Measurement
Grade Levels	Kindergarten, 1st, 2nd
Resource Types	Math Centers
Product Rating	4.0 755 ratings
File Type	PDF (Acrobat) Document File Be sure that you have an application to open this file type before downloading and/or purchasing. 3.17 MB

PRODUCT DESCRIPTION

***Two new activities added! Make sure to re-download if you have already purchased! The new activities are:

1. "Measure" write the room. Students find words around the room starting with "M," "E," etc. and write sentences with those words.
2. An "I can measure" emergent reader and hands-on measurement book. Students fill in the sight word "can" on each page and measure the length of an object with unifix cubes. On the last page, they get to choose an object around the room to measure.

Foldables

- The limits of foldables.
- Cutting and folding is absorbing and gives the appearance of engagement and compliance.
- If the shape of the foldable doesn't match the concept what is the point? Categories of living things are nested subsets of one another – hard to show in a foldable.
- Research on touching insets while learning formulas.

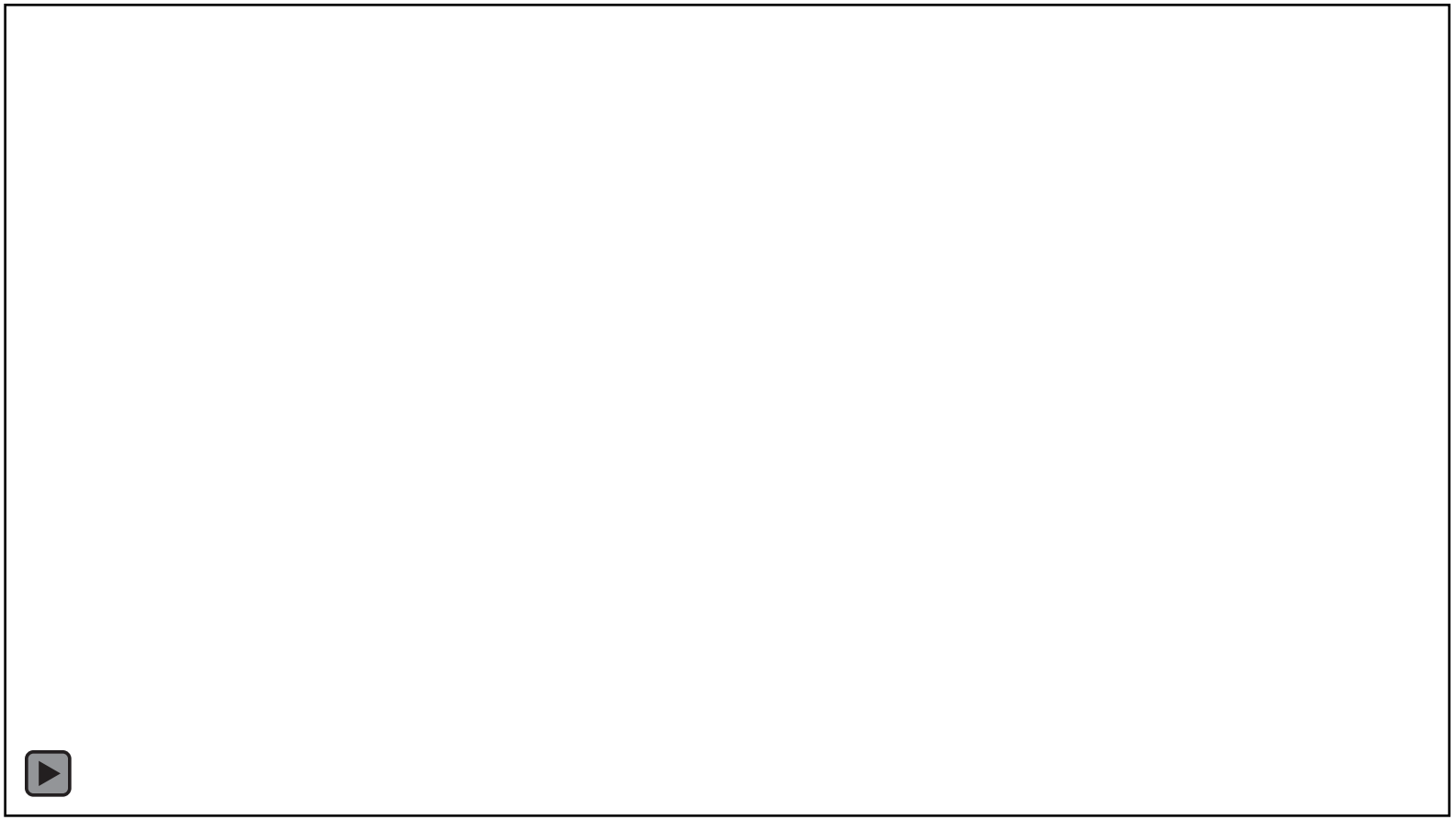
Checklist

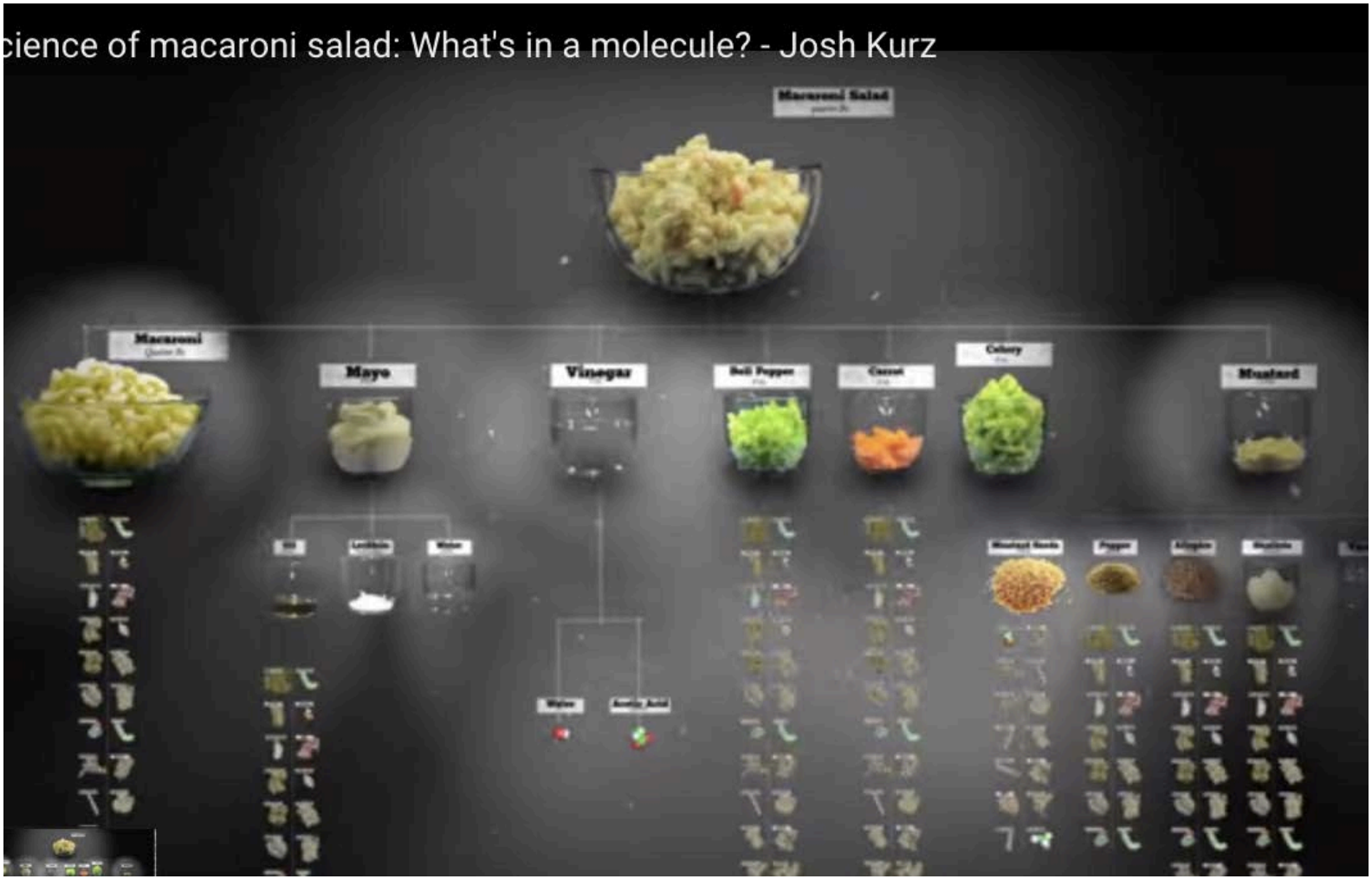
- ❑ Design supports learning concept
- ❑ Developmentally appropriate
- ❑ Supports student's autonomy
- ❑ A few procedures, applicable to many outcomes.
- ❑ Self-correcting
- ❑ Helps student to organize knowledge
- ❑ Part of 3 Period Lesson
- ❑ Multi-age
- ❑ In the world
- ❑ Peace making

“The teacher must not content herself with merely providing an attractive environment. She must continuously thinking about this environment, because a large part of the result depends upon it.”

Some Words of Advice to Teachers, AMI Communications, 1995, 4, 14

Macaroni




cience of macaroni salad: What's in a molecule? - Josh Kurz
Macaroni Salad
Macaroni
Mayo
Vinegar
Bell Pepper
Carrot
Celery
Mustard

1 Guided Discussion 8 Open Discussions

« All Guided Discussions

TED-Ed
Lesson Creator
New York, NY

Why do you think it's important to understand this concept: everything is made of the same stuff.

08/16/2013 +4 Respond

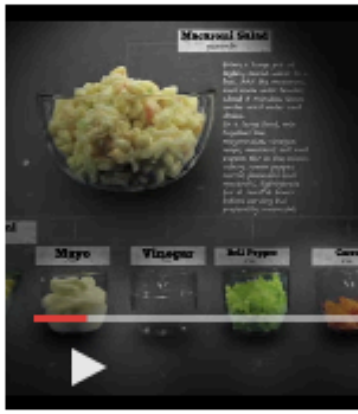
Oğuzcan Yavaş · Istanbul, Turkey · COMPLETED LESSON

To me, for teaching creativity. With this lesson, I realized that legos are like atoms. By using 6 shapes or more, you can create anything you like.

08/16/2013

shadow phantom · Colombo, Sri Lanka · COMPLETED LESSON

It can help mankind in the near future. We can extract components need for medicines, food, cloths and make earth a better place.



Watch

Think

Dig Deepe

Discuss

Customize This L

Create and share a ne
on this one.

Let's Begin…

What do macaroni salad and gasoline have in common? They are made of exactly the same stuff -- specifically, the same atoms, just rearranged. So, while we put the former in our mouths and the latter in our cars, they are really just variations on the same atomic theme. Josh Kurz breaks macaroni salad down to its smallest chemical components.

Watch

Think

Dig Deeper

Discuss

Customize This Lesson 228

Create and share a new lesson based on this one.

Let's Begin…

What do macaroni salad and gasoline have in common? They are made of exactly the same stuff -- specifically, the same a
while we put the former in our mouths and the latter in our cars, they are really just variations on the same atomic theme. Jo
salad down to its smallest chemical components.

1 2 3 4 5 6

Many larger complex molecules are just _____.

A Random bits of chemical information that scientists don't really understand

B Smaller molecules bonded together like building blocks

C Change their chemical composition randomly, but on a consistent basis

D Are unique to macaroni salad (that's why we're using it as an example), and can exist nowhere else in the world

Watch

Think

Dig De

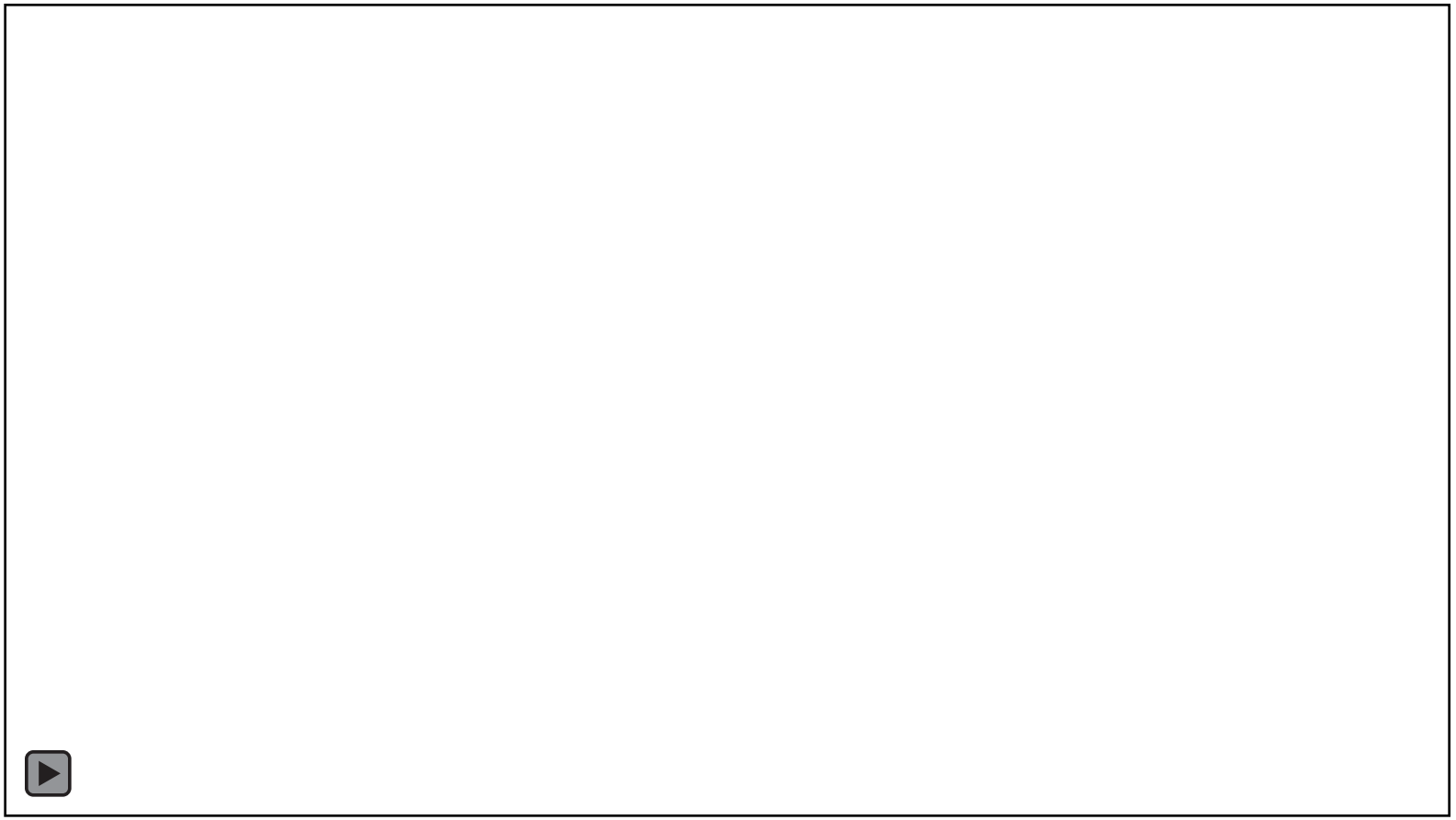
Discuss

Customize

Checklist

- ❑ Design supports learning concept
- ❑ Developmentally appropriate
- ❑ Supports student's autonomy
- ❑ A few procedures, applicable to many outcomes.
- ❑ Self-correcting
- ❑ Helps student to organize knowledge
- ❑ Part of 3 Period Lesson
- ❑ Multi-age
- ❑ In the world
- ❑ Peace making

Overview Lesson: Cell



Checklist

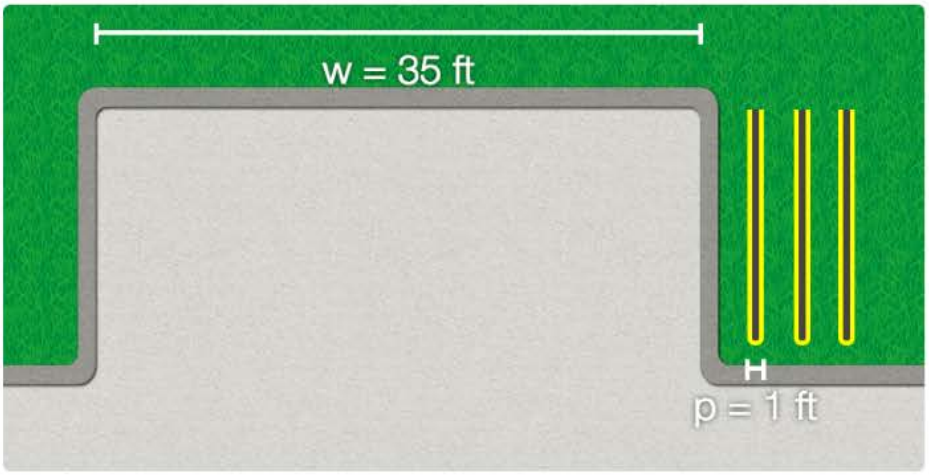
- ❑ Design supports learning concept
- ❑ Developmentally appropriate
- ❑ Supports student's autonomy
- ❑ A few procedures, applicable to many outcomes.
- ❑ Self-correcting
- ❑ Helps student to organize knowledge
- ❑ Part of 3 Period Lesson
- ❑ Multi-age
- ❑ In the world
- ❑ Peace making

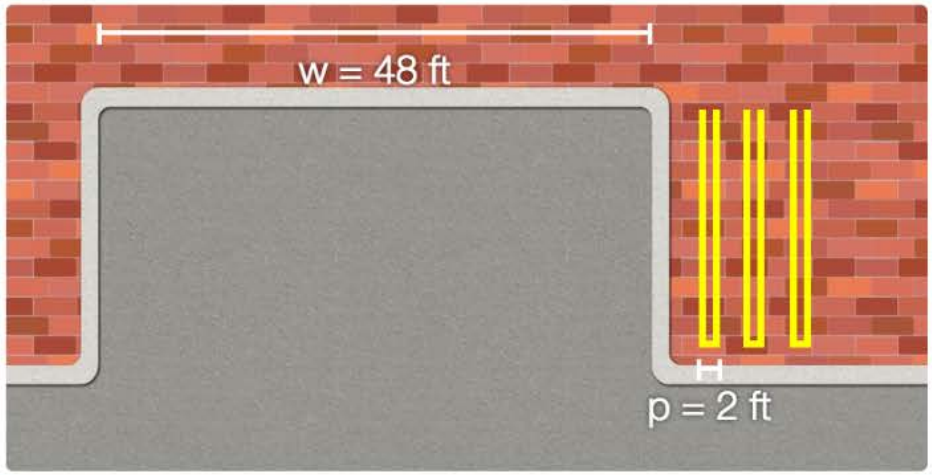
Use variables to write an expression for the ideal width (d) of each space.

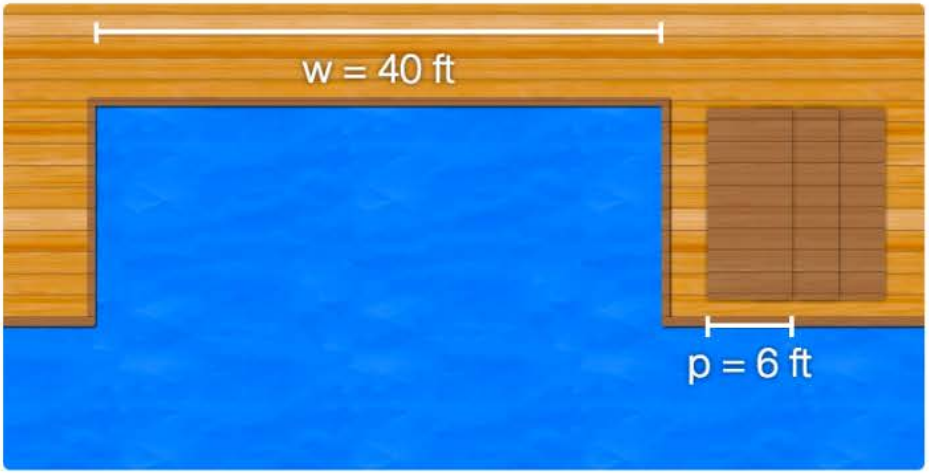
For each of the lots below:
w is the width of the lot
p is the width of each divider

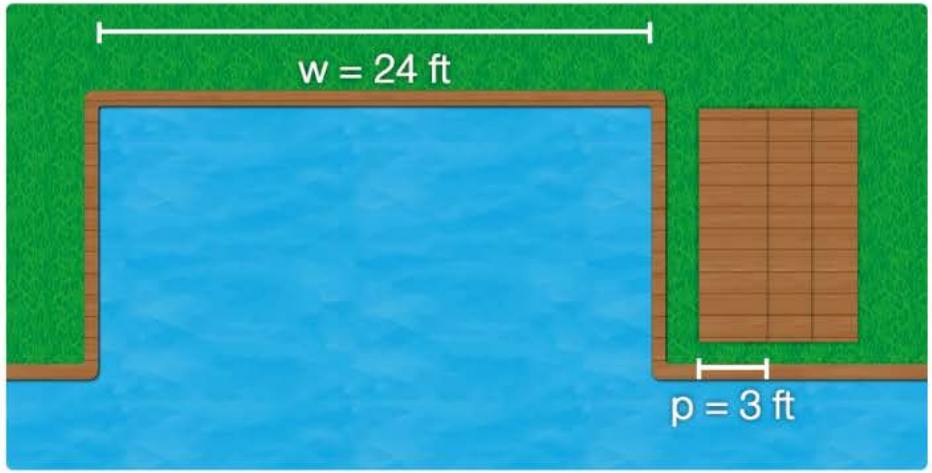
$d =$ ft try it

hint: you can use variables, like w and p



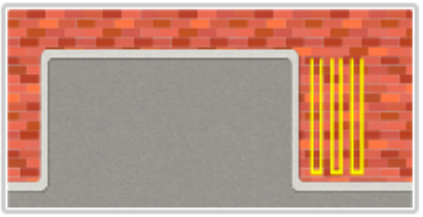






Central Park

ESTIMATES

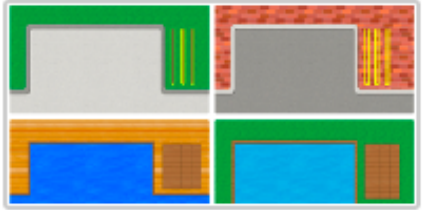


Suppose you wanted to figure out the exact space between the dividers. What measurements would you need?

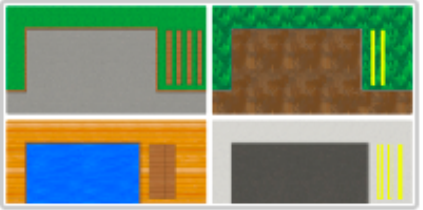
NUMBERS

Help your friends! Write instructions explaining how to calculate the right width of the parking space for any situation.

EQUATIONS



There's something different going on here. How is this parking lot different from the ones we've already seen?



Eric says that if we turn this parking lot into eight spaces, each space is going to be exactly half as big. Do you agree?

WRAP UP

We don't really like the title for this lesson. We'd like a title that summarizes everything you learned today – the math, the world, and all. What should we title this lesson?

Central Park

Anna Cla

ESTIMATES

✓	✓	✓	Probably a measuring tape. Or Square Ft.

NUMBERS

8 ✓	10.5 ✓	5.75 ✓	FThere a 6 dividers. You would subtract the total numbers of ft the dividers tke up all together. 41-18=23. Next you would divide 4 from

EQUATIONS

$\frac{(w-3p)}{4}$ ✓	Theres only 3 parking spaces..	$\frac{(w-n\cdot p)}{n+1}$ ✓	agree Because if you add a divider in the middle of each one than it becomes 8 dividers which makes it half

WRAP UP

Central Park

Checklist

- ❑ Design supports learning concept
- ❑ Developmentally appropriate
- ❑ Supports student's autonomy
- ❑ A few procedures, applicable to many outcomes.
- ❑ Self-correcting
- ❑ Helps student to organize knowledge
- ❑ Part of 3 Period Lesson
- ❑ Multi-age
- ❑ In the world
- ❑ Peace making

Look for what Internet resources do well

- Self-correcting and adjusting
- Community of mentors
- Global Reach
- Authentic Tasks
- Aesthetically Engaging Tasks

Look for what your program needs

Look for what your program needs more of:

- More research paper writing?
- More problem solving with students with different world views?
- A larger window onto the world?
- More making change in the world?

Terminology and Beliefs

- Differentiation
  - Meeting the needs of every child by observing and developing learning paths for each
- Follow the Child
  - Successive stages
  - Internally driven development
  - A prepared environment for each stage.
  - Multi-age groupings

Words are Beliefs

Cosmic Education

- "...the Cosmic Plan can be presented to the child, as a thrilling tale of the earth we live in...." (To Educate the Human Potential, p. 2)
- To have a vision of the cosmic plan, in which every form of life depends on directed movements which have effects beyond their conscious aim, is to understand the child's work and be able to guide it better." (Dr. Maria Montessori, 'The Absorbent Mind', Clio Press, 135)

Project-based Learning

A teaching method in which students gain

knowledge and skills by working for an extended period of time to investigate and respond to a meaningful, real-world complex question, problem, or challenge (Bie.org, 2014).

Words are Beliefs

OUTCOME-BASED EDUCATION

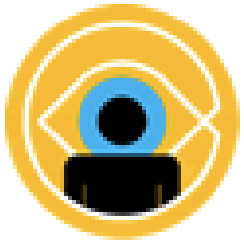
NON-MONTESSORI EDUCATIONAL COMMUNITY:

OBE is an educational theory that bases each part of an educational system around outcomes. By the end of the educational experience or lesson each student should have achieved the outcome's goal. Classes, opportunities, and assessments should all be based around helping students achieve the specified outcomes (Spady).

- OUTCOME-BASED EDUCATION
- MONTESSORI: Each learning experience has dual outcomes or aims.
- • Indirect aims focus on abilities and aptitudes that children will put to good use throughout their lives. These are often foundational to children's success.
- • Direct aims provide the child with a skill she can use in the present and is typically less global and more connected with a specific skill.

edutopia

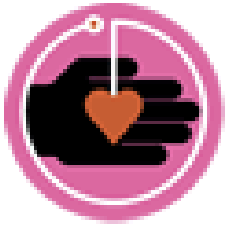
Integrated Studies



Comprehensive Assessment

Project-Based Learning

Technology Integration



Character Education

Teacher Development

Montessori Education

- Takes place in a prepared environment
- Educates to save the world from war.
- Recognizes the different developmental needs of the child
- Provides sensorial materials.
- Provides lessons in practical life.
- Provides access to the natural world.
- Recognizes the spiritual and aesthetic needs of the child.
- Sees tactile experience and interpersonal experience as essential to healthy development.
- Shares a vision of students as intrinsically primed to learn and to organize their learning.

Which components of a three period lesson?

When do you use videos?

When do you use videos?

- Technique overview: How to use a digital material
- Impressionistic lesson
- Rug as Concept Map Lesson: Organizing concepts and ideas, introducing links between previous experiences and new ideas, new vocabulary

When do you use videos?

- Technique overview: How to use a digital material
- Impressionistic lesson
- Rug as Concept Map Lesson: Organizing concepts and ideas, introducing links between previous experiences and new ideas, new vocabulary

When do you use digital interactives?

- Concept maps
- Independent practice
- As a self-correcting material, reinforcing lesson.

Phet

Zooniverse

Tour of Ellis Island

Should a student be reading aloud to a computer?

SELF-ADJUSTING INDEPENDENT WORK

- “I can do it myself.”
- Self-correcting material.

- The downsides:
  - Currency reward system (teacher opt out)
  - Leader board (teacher opt out)
  - Screen vs people

Use Professionally Curated Sites

- Read Write Think
- National Science Teacher's Association
- NCTM – Illuminations
- CPALMS

NCTM


Grades 3–5:
Petals Around the Rose
ALGEBRAIC THINKING
Identify patterns in a dice game.

Know Your Own

- Montessori Math Materials Might Be Phased Out Too Early

Checklist

- ❑ Design supports learning concept
- ❑ Developmentally appropriate
- ❑ Supports student's autonomy
- ❑ A few procedures, applicable to many outcomes.
- ❑ Self-correcting
- ❑ Helps student to organize knowledge
- ❑ Part of 3 Period Lesson
- ❑ Multi-age
- ❑ In the world
- ❑ Peace making