

The Global Learning Resource Connection

Supporting the Next Generation of Education

The Achievement Standards Network (ASN)

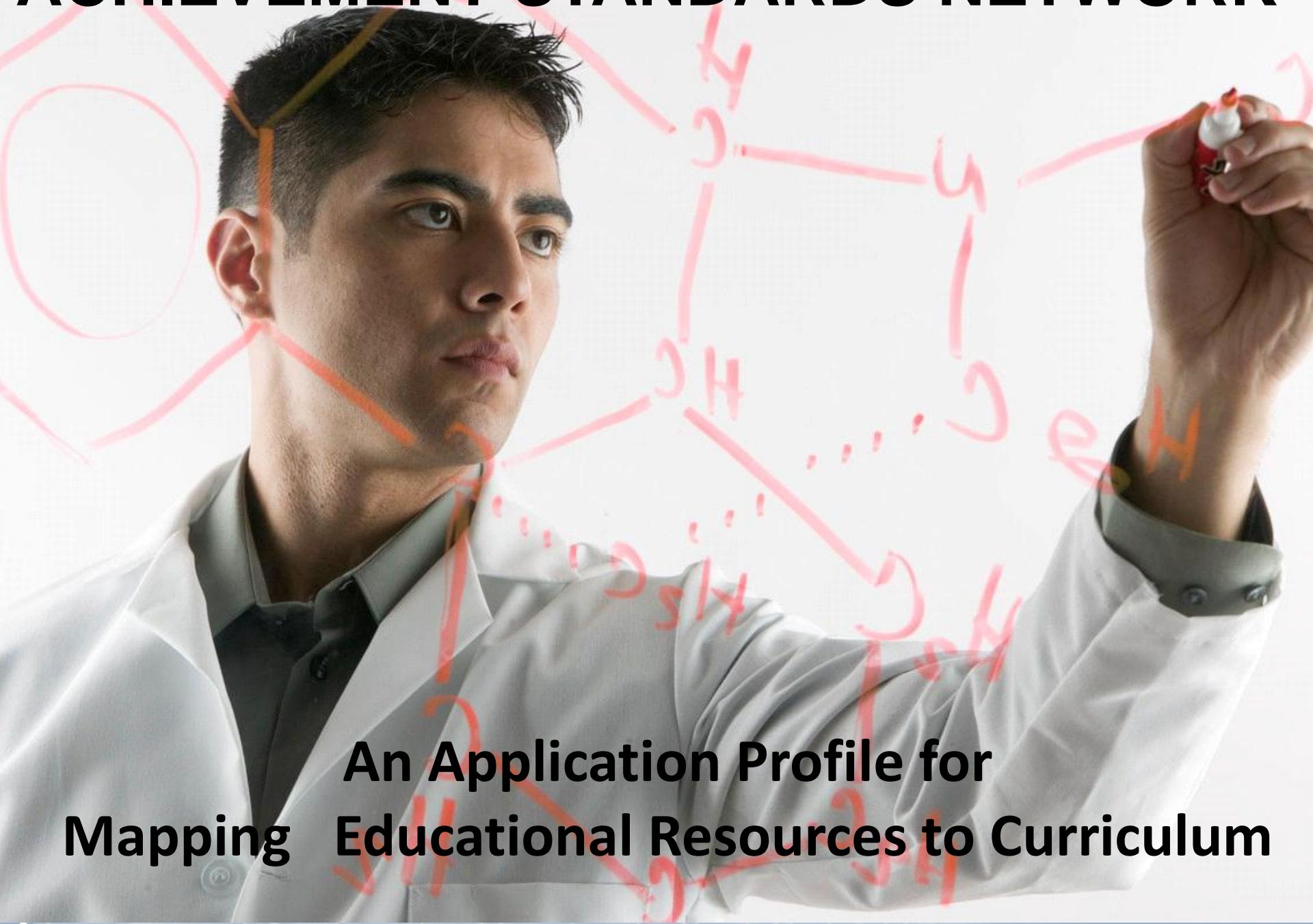
A JES & Co. Program



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ACHIEVEMENT STANDARDS NETWORK



An Application Profile for
Mapping Educational Resources to Curriculum

The Facts...

- Large repositories of educational resources are being created
- Countries, states and territories have various forms of curriculum e.g., national curricula (Achievement Standards)
- Metadata mapping educational resources to curriculum supports teaching, learning and accountability

ASN Goals...

- **Create a multi-national bank of curriculum in machine addressable form that**
 - Are accurate digital representations of curriculum documents and their component statements (semantic units);
 - Are consistent in form; and
 - Are modeled in RDF and amenable to the emerging Semantic Web.
- **Design an extensible framework to support evolving uses.**
- **Provide open access.**



**...And Travels Well Between States
and Countries**

**Machine-
addressable
form**

Curriculum Repository

**Semantic-web
amenable**

Achievement Standards

Achievement Standards
Define What Is Taught in
the Classroom

Achievement Standards
Define What Skills Are
Tested

Tight Coupling

Instruction

Assessment



We Started with the 50 U.S. States

WISCONSIN



KANSAS

ARKANSAS

OKLAHOMA



STATE OF OREGON



1859

Process ...

- **Gathered all current and historical curriculum documents in the United States**
(In the USA, 761 documents have been decomposed (atomized) into “statements” derived from document structure and content in excess of 350,000 learning objective statements)
- **All documents and statements were assigned URIs and that are dereferencable over the Web**

Two Basic Functions

Describe

Relate

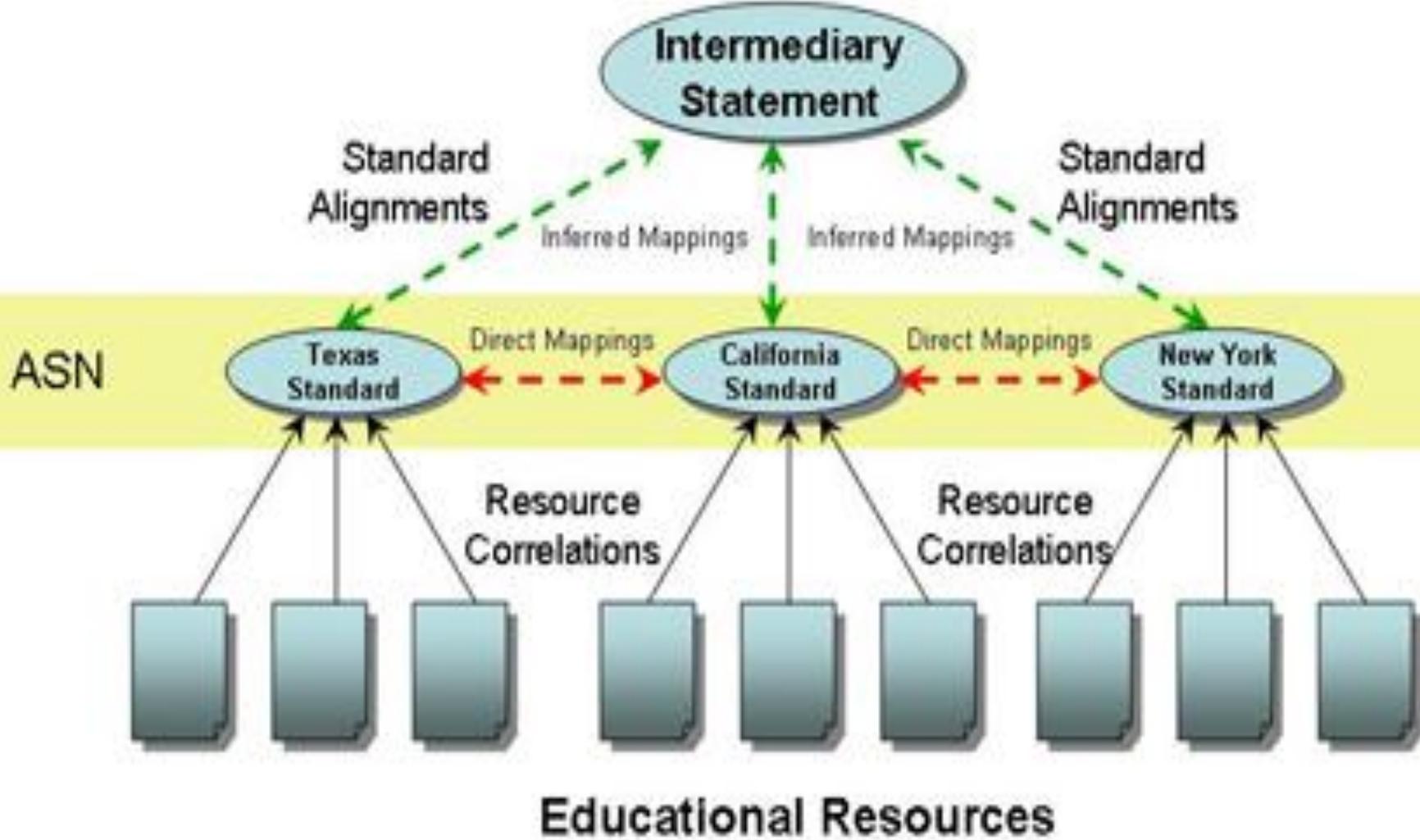


In a Machine Readable Format



Richly Describe the Curriculum ...

Description	Administration	Relationships
<ul style="list-style-type: none">• Author• Comment• Concept Term• Description• Education Level• Jurisdiction• Local Subject• Publisher• Skill Embodied• Spatial (aspects)• Statement Label• Statement Notation• Subject• Temporal (aspects)	<ul style="list-style-type: none">• Authority Status• Change Note• Created• Date Copyrighted• Date Valid• Editorial Note• History Note• Indexing Status• License• Publication Status• Rights• Rights Holder	<ul style="list-style-type: none">• Align To• Align From• Cross Subject Reference• Derived From• Has Child• Is Child Of• Source



Relate the statements to each other and to resources.

[The Verizon Foundation](#)[Literacy Network](#)[About Thinkfinity](#)[Contact Us](#)[Free Thinkfinity Training](#)**Thinkfinity wants to know...**

Tell us if you are using Thinkfinity Resources as a:

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- Librarian/Media Specialist
- Parent
- Student
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FEATURES

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2

3

4

5



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search for **lesson plans,
interactives & more...**

Enter Keyword: ?

Subject: ?

Grade: ?

Search All

All

Resource Type: ?

Search All

Content Partners: ?

Search All

Browse: [Subject](#) | [Keyword](#)**go >**[educator](#)[student](#)[parent](#)[afterschool](#)**Consortium Partners:**

- | | |
|--------------------|--------------------------------|
| ARTSEDGE | ReadWriteThink |
| EconEdLink | Science NetLinks |
| EDSITEment | Smithsonian's History Explorer |
| Illuminations | Xpeditions |
| Literacy Network | |
| Verizon Foundation | |



Integration Thinkfinity

Use this wealth of
FREE materials

- ARTSEDGE lessons incorporate the [National Standards for Arts Education](#).
- EconEdLink lessons address the [Voluntary National Content Standards in Economics](#).
- EDSITEment references the following standards, accessible from its [reference shelf](#):
 - International Reading Association (IRA)/National Council of Teachers of English (NCTE) Standards for the English Language Arts
 - National Geography Standards
 - National Council for Social Studies Curriculum Standards
 - National Standards for Arts Education
 - National Standards for Foreign Language Education
 - National Standards for Civics and Government
- Illuminations lessons incorporate, or "illuminate," the [National Council of Teachers of Mathematics? \(NCTM\) Principles and Standards for School Mathematics](#).
- ReadWriteThink lessons address the [IRANCTE Standards for the English Language Arts](#).
- Science NetLinks' content is organized around the [Benchmarks for Science Literacy](#).
- Smithsonian's History Explorer lessons are aligned to the [UCLA National Center for History in the Schools \(NCHS\) History Standards](#)
- Xpeditions lessons are aligned to the [National Geography Standards](#).

The following State Education Partners are working with Thinkfinity.org to review and validate the new state standards alignment project:

- [Georgia Department of Education](#)
- [Massachusetts Department of Elementary and Secondary Education](#)
- [West Virginia Department of Education](#)
- [Wisconsin Department of Public Instruction](#)



TEACH Engineering

Resources for K-12

Curriculum Search

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[What is MyTE?](#)

Home

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Living Labs

Why K-12 Engr?

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About Us

Policies

Jan 2009 Workshop

Premier Curriculum
Award for K-12
Engineering

Funded by:



EDC

Academic standards
provided by:



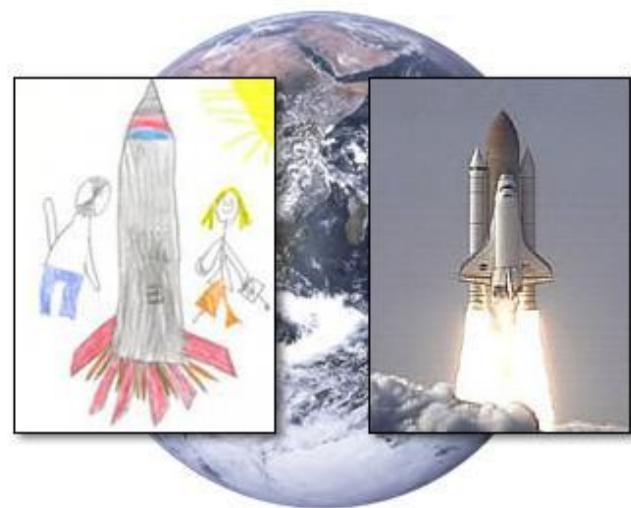
Welcome to the world of K-12 engineering education!



Now celebrating over 500 activities!

Engineers have a hand in designing, creating or modifying nearly everything we touch, wear, eat, see and hear. Introducing engineering into the K-12 classroom connects science and math concepts to the everyday engineering that surrounds us. This teacher resource, *TeachEngineering.org*, helps teachers enhance learning, excite students and stimulate interest in science and math through the use of hands-on engineering.

Just a cute kid with a great imagination...
or an aspiring engineer who will shape our world?



Integration TeachEngineering

There are many ways to access the materials in this collection:

- [Search](#) the collection by specifying keywords, grade levels, educational standards, or other criteria
- [Browse](#) curricular contents by subject area, curricular units, lessons or activities
- Access your favorite items and submit reviews in your own personalized [MyTE](#) area

Stay in the know
about upcoming shows.
[Get email updates](#)

@GBH and
@89.7



Violinist Joshua Bell performs with the BSO [Live from Tanglewood](#), July 12 on WGBH 89.7

Today is **Thursday** Jul. 9

Radio



Hear [Haydn's The Creation](#) in concert from Dresden, **Tuesday–Thursday, July 7–9, at 2pm** on **WGBH 89.7**.



[All Things Considered](#) offers a mix of news, features, and commentary, **weekdays, 5pm–7pm, WGBH 89.7**.



NEWS

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Today's digital mural



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give you a tax
receipt, and
drive away.



Integration WGBH

LandVest
AVAILABLE FOR SALE

Search

User: Diny Golder of CANYON DEL ORO HIGH SCHOOL

My Folders My Groups My Profile

? Help | Sign out

Resource: Chess Wager

Recommended for: Grades 5-8



Media Type:
QuickTime Video

Length:
Size: 9.5 MB

[View](#)

or

[Download](#)

Permitted use:
Download and Share



In this video segment from *Cyberchase*, Harry plays a game of chess with a young friend and suggests a wager on the game. Harry's friend uses a story to explain how putting a penny on the first square and then doubling the amount on each square of the chessboard can generate a tremendous amount of money over time.

[Save to a folder](#)

[Recommend to a Colleague](#)

[Cite This Resource](#)

Frame and Focus

Follow Up

Connections

Standards

Standards for Grades: 1-12 [Change grade range](#)

About standards correlation

[close](#)

Academic standards correlations on Teachers' Domain use the Achievement Standards Network (ASN) database of state and national standards, provided to NSDL projects courtesy of JES & Co.

NSDL:ASN
Achievement Standards Network

We assign reference terms to each statement within a standards document and to each media resource, and correlations are based upon matches of these terms for a given grade band. If a particular standards document of interest to you is not displayed yet, it most likely has not yet been processed by ASN or by Teachers' Domain.

Related Resources:

 [Lily Pad Escape](#)
(QuickTime Video)

See Also:

K-12 Subject:
[Exponential Growth](#)

Lesson Plans Using this Resource:
[Exponential Growth Introduced](#)



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Assign/Add Content Expectations

Grade 6



Science, K-8 (200)



Go

In this global economy, it is essential that Michigan students possess personal, social, occupational, civic, and quantitative literacy. Mastery of the knowledge and essential skills needed in Michigan's Grade Level Content Expectations will increase students' ability to be successful academically, and contribute to the future businesses that employ them and the communities in which they choose to live. Reflecting best practices and current research, the Grade Level Content Expectations provide a set of clear and rigorous expectations for all students, and provide teachers with clearly defined statements of what students should know and be able to do as they progress through school. [D1000332 \(14419\)](#)

- Discipline 1 Science Processes [S1130075 \(14420\)](#)
- Standard: Inquiry Process [S1130079 \(14421\)](#)
 - K-7 Standard S.IP: Develop an understanding that scientific inquiry and reasoning involves observing, questioning, investigating, recording, and developing solutions to problems [S113007C \(14422\)](#)
 - S.I.P.M.1** Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.
[S113007E \(14454\)](#)
 - S.I.P.06.11** Generate scientific questions based on observations, investigations, and research. [S11300B5 \(14461\)](#)
 - S.I.P.06.12** Design and conduct scientific investigations. [S11300B6 \(14462\)](#)

Source: Subject(s): Search/Add
Release Flag:
 Date Of Record Creation:
Date Of Record Release:
Date Record Checked:
Added By Id: [bfardell](#)Last Modified By Id:
[bfardell](#)ERIC Descriptor(s): Content Expectation(s): S.I.P.M.1[S113007E] Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.

Michigan Online Resources for Educators - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Michigan.gov
The Official State of Michigan Website

Michigan eLibrary
History, Arts and Libraries

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MICHIGAN eLIBRARY
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MeL Home | **MeL Databases** | **MeL Catalog** | **MeL Michiganana** | **Featured Resources** | **Michigan Online Resources for Educators**

Subject & Year Adopted		Status
View	English & Language Arts, K-8 (2004)	Active
View	English & Language Arts, 9-12 (2006)	Active
View	Health, K-8 (2007)	Active
View	Math, K-8 (2006)	Active
View	Math, 9-12 (2006)	Active
View	Science, K-8 (2007)	Active
View	Science, 9-12 (2006)	Active
View	Social Studies, K-8 (2007)	Active
View	Social Studies, 9-12 (2007)	Active
View	Technology, K-12 (2005)	Active

This service is funded in part by the State of Michigan through the [Library of Michigan](#).

Additional project support comes from the Federal Library Services and Technology Act (LSTA) via the [Institute of Museum and Library Services](#) (IMLS).

[Michigan.gov Home](#) | [Library of Michigan](#) | [HAL Home](#) | [MeL Home](#) | [Contact MeL](#) | [MyMeL](#) | [About MeL](#) | [Help](#) | [Contact Your Library](#) | [MeL Privacy Policy](#)
[State Web Sites](#) | [Privacy Policy](#) | [Link Policy](#) | [Accessibility Policy](#) | [Security Policy](#)
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Resources

Measure 4 Measure: Sites That Do the Work For You

Here is a collection of interactive Web sites that calculate, convert, or translate a variety of things. Topics for calculation range from health risks to height and weight calculators to converting magnetic flux. Morph words, determining word frequencies, changing names to Japanese - the opportunities are endless. Sites are organized alphabetically by subtopic. Subtopics include Science/Math, Health, Finance, All 'Round the House, and A Measure of Everything Else. [full record](#)

MendelWeb

"MendelWeb is an educational resource for teachers and students interested in the origins of classical genetics, introductory data analysis, elementary plant science, and the history and literature of science." Mendel's experiments in plant research are described in great detail. Site also includes a detailed biography of Mendel and a close look at his life. [full record](#)

Space Station Phyve

In this WebQuest, students will investigate what is required to create a space station. They will research and design a cost-efficient

UK: Mon, 7:42pm GMT+01:00

US Pacific: Mon,

The Michigan.gov eLibrary Libraries page features three images of children reading books. At the top right is the Michigan.gov logo with the text "Michigan.gov" and "The Official State of Michigan Website". Below the logo are links: "MeL Home", "Contact MeL", "MyMeL", "About MeL", and "Help". A red arrow points from the left side of the screen towards this section.

Math, 9-12 (2006):

and 1: Quantitative Literacy and Logic

Standard L1: Reasoning About Numbers, Systems and Quantitative Situations

L1.1 Number Systems and Number Sense

L1.1.1 Know the different properties that hold in different number systems, and recognize that the applicable properties change in the transition from the positive integers, to all integers, to the rational numbers, and to the real numbers



L1.1.2 Explain why the multiplicative inverse of a number has the same sign as the number, while the additive inverse of a number has the opposite sign.



L1.1.3 Explain how the properties of associativity, commutativity, and distributivity, as well as identity and inverse elements, are used in arithmetic and algebraic calculations.



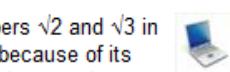
L1.1.4 Describe the reasons for the different effects of multiplication by, or exponentiation of, a positive number by a number less than 0, a number between 0 and 1, and a number greater than 1.



L1.1.5 Justify numerical relationships (e.g., show that the sum of even integers is even; that every integer can be written as $3m+k$, where k is 0, 1, or 2, and m is an integer; or that the sum of the first n positive integers is $n(n+1)/2$).



L1.1.6 Explain the importance of the irrational numbers $\sqrt{2}$ and $\sqrt{3}$ in basic right triangle trigonometry; the importance of π because of its role in circle relationships; and the role of e in applications such as



Choose Grade:

- All Grades
- Kindergarten
- Grade 1
- Grade 2
- Grade 3
- Grade 4
- Grade 5
- Grade 6
- Grade 7
- Grade 8
- Grade 9-12

Competency Example

Course Home Content Discussions Dropbox Quizzes Surveys Competencies

By Hierarchy

- Alaska Content Standards Mathematics
 - A. A student should understand mathematical facts, concepts, principles, and theories.
 - 1) understand and use numeration, including a. numbers, number systems, counting numbers, whole numbers,integers fractions, decimals, and percents; and b. irrationals and complex numbers;
 - 2) Addition Quiz 1
 - 3) select and use appropriate systems, units, and tools of measurement,inc estimation;
 - 3) perform basic arithmetic functions, make

Edit Competency

Competency Home Edit Competency Competency Structure Competency Results

Cancel Save and New Save

General Information

Type: Competency
*** Name:** Alaska Content Standards Mathematics
Description: The State Board of Education & Early Development adopted into regulation Content Standards listed on the following pages. Content Standards are broad statements of what students should know and be able to do as a result of their public school experience.
Grades: Pre-K K 1 2 3 4 5 6 7 8 9 10 11 12
Subject: math
Data from ASN (www.achievementstandards.org)
Status: Approved ?

Make Competency and its children visible to users ?

Evaluation Settings

Allow re-evaluation of users who have achieved this Competency ?

Cancel Save and New Save

[Log in](#) [Register](#)

Success for today

Preparation for tomorrow

Learning for a Lifetime

The GATEWAY

to 21st Century Skills

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ASSOCIATION
nea.org

Great Public Schools
for Every Student

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Full Text

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+ BROWSE

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* [View your States' Academic Standards*](#)

Joann's Weekly Picks

Do you want to see how well the Gateway's resources meet your State's standards? Join us as we test our "standards suggestion", provided by the Center for Natural Language Processing. It is as easy as 1 - 2 - 3. 1 - Use the faceting search engine to find a resource that meets your needs. 2 - Click on the "View, share, comment" button. 3 - Choose your state, subject and grade and push the "suggest standard" button. It is just that easy. Please send us your feedback to brucew@jesandco.org.

Battle of the Bulge

Childhood obesity has become a major concern for nations worldwide.

WHAT EDUCATORS ARE LOOKING FOR

Shipwrecks
Second graders
Silent
Slide shows
Sleep
Skeletons
Silhouettes
Sickness
Senior citizens
Self-paced learning
Self space
September
Shadows
Seeds
Short stories
Setting
Simulations
Seniors
Seismology
Simulations
Slope
Solar system
Solidarity
Source materials

PEGGY'S CORNER

Gateway members, we have exciting news. We are testing a "standards suggestion" tool. Please help us make the Gateway Your Gateway. Follow Joann's simple 1, 2, 3 steps and send us feedback.

You Are What You Eat

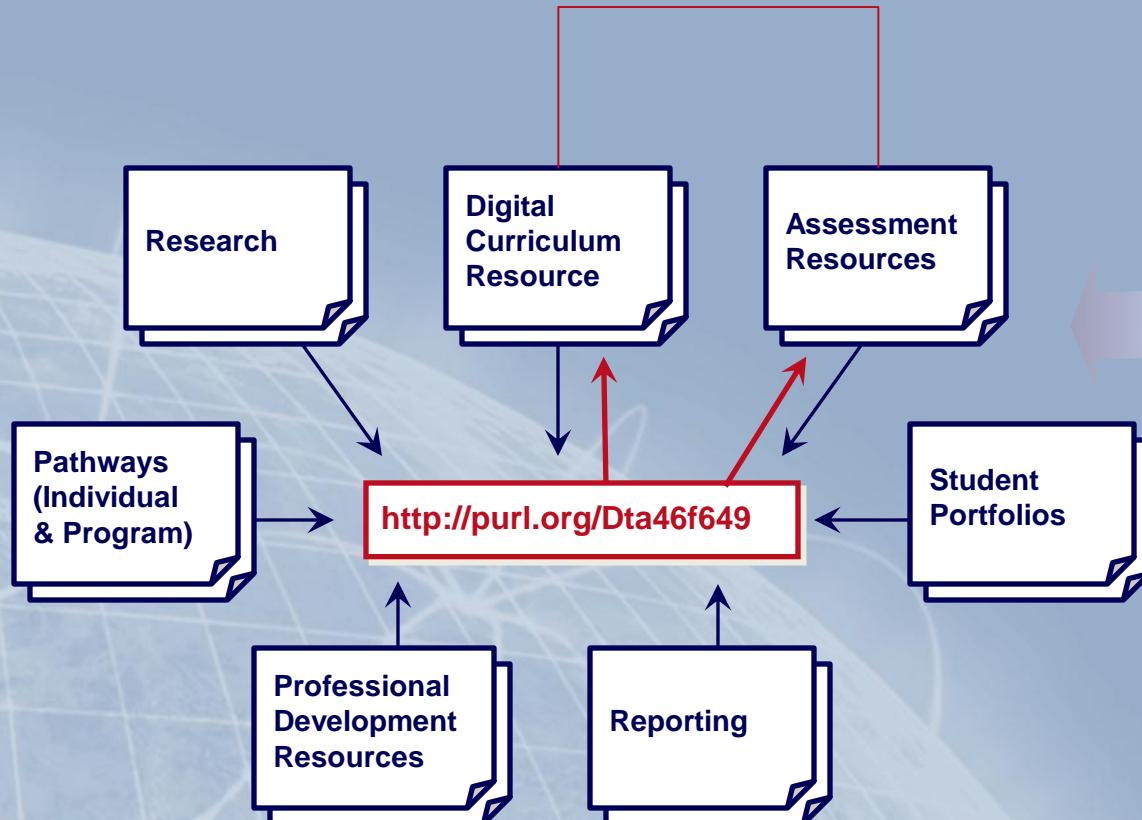
You can hardly turn on the TV any more without seeing some kind of a message about healthy eating. Jamie Oliver is trying to change school cafeterias in his "Food Revolution" series while "The Biggest Loser" shows contestants learning to eat right and exercise to lose weight. In between shows on the Disney Channel, my kids love watching "Captain Carlos" and "Tasty Time With Zefronk," both shorts that target healthy eating for the preschool set. More ...



We expanded the Work to Include Australia and the UK.



National Curriculum*



VELS Level 3 Mathematics

Number

At Level 3, students use place value (as the idea that 'ten of these is one of those') to determine the size and order of whole numbers to tens of thousands, and decimals to hundredths.

Learning Area: Mathematics

Year Level: 3

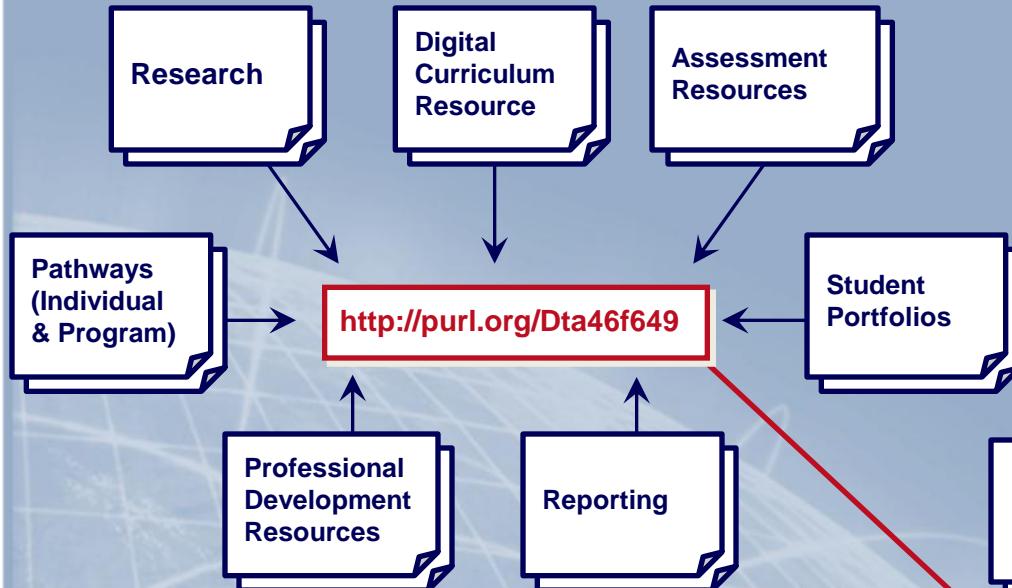
Strand: Number ...

<http://purl.org/Dta46f649>

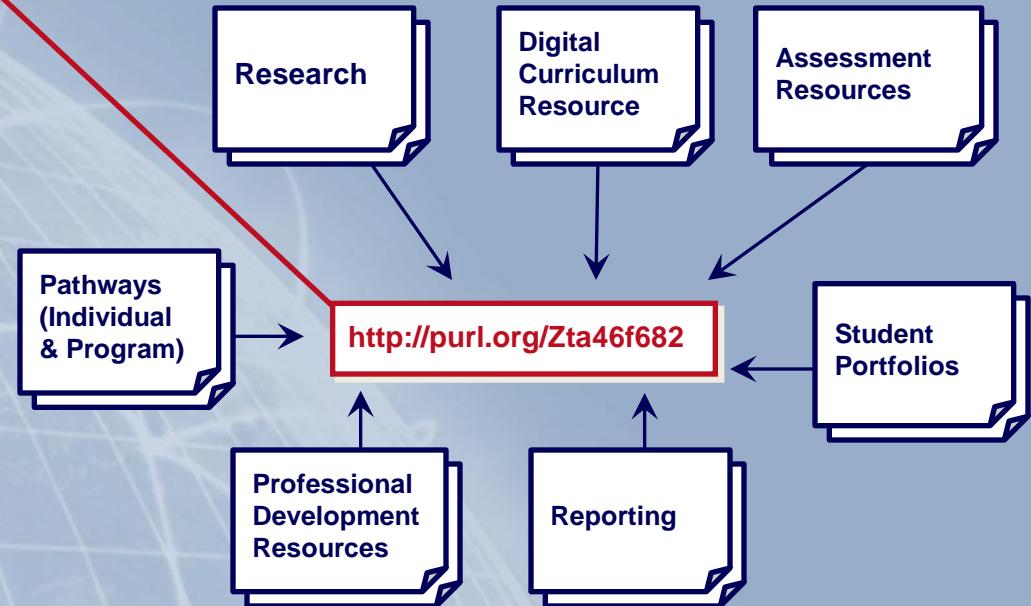
**This slide was created in a working session with state and federal education leaders in May 2009, Melbourne, Australia, while consulting to them regarding Australia's National standards efforts.*

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National curriculum*



State/Territory curriculum



Math 6 - Act. 22: The Dice Game

Group Size:
Small Groups



AU Resource

Are you ready to race?
Check out the Rules, then
get started.
Remember to keep racing
until you have a winner.



Rules

UK Resource

play your cards right!



Spydrax has nine cards numbered 1 to 9. He will show you a card, and you must predict whether the next card he shows you will be higher or lower. Try to win six chips!

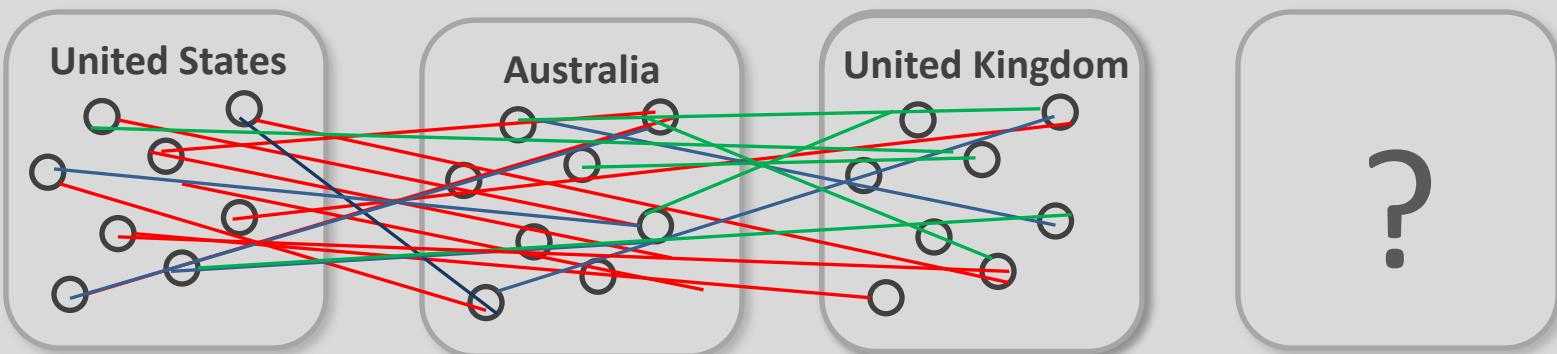
start



London Grid for Learning

Click on this text to close this activity window

Teachers & Learners



Applications, Services & Agents

Linked Australia, the United States and the United Kingdom using Linked Data principles

Expand the Work to Include European Countries



Global interoperability

- Open source achievement standards data with globally unique, Web-resolvable identifiers (URI) support:
 - Efficient integration of data from disparate resource providers
 - Resource sharing and linking related resources
- Support of curriculum that is language independent

The Achievement Standards Network is part of the
Global Learning Resource Connection;
collaborating to *connect the dots* between education systems that
support teaching and learning.

Questions ?



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