2010 Minnesota K-12 Academic Standards in English Language Arts: What Do Content Teachers Need to Know?

Frameworks for Mathematics and
Science Standards Workshop
October 2011

2010 Minnesota Academic Standards–English Language Arts K-12

The standards are organized into three main sections

Standards for English Language Arts & Literacy in History/ Social Studies, Science and Technical Subjects GRADES K-5	Standards for English Language Arts GRADES 6-12	Standards for Literacy in History/ Social Studies, Science and Technical Subjects GRADES 6-12

Each section is divided into strands

Reading Foundations Literature Informational Text	**Reading** Literature Informational Text	**Reading**
Writing	**Writing**	**Writing**
Speaking, Viewing, Listening & Media Literacy	**Speaking, Viewing, Listening & Media Literacy**	
Language	**Language**	

Each strand features learning progressions that are anchored in **college and career readiness standards**

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Distribution of Literary and Informational Passages by Grade in the 2009 NAEP Reading Framework

Grade	Literary	Informational
4	50%	50%
8	45%	55%
12	30%	70%

Distribution of Communicative Purposes by Grade in the 2011 NAEP Writing Framework

Grade	To Persuade	To Explain	To Convey Experience
4	30%	35%	35%
8	35%	35%	30%
12	40%	40%	20%

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Strands and substrands

Anchor standards and benchmarks

Grade level progressions

Definition of "text"

Where are these benchmarks taught and assessed?

Looking at the Standards

- Find a couple people who teach a similar grade/content area as you.
- Pick a section of the Literacy standards that applies to your group.

1. What are some practices that you are doing now that help students with those standards?
2. What modifications in your instruction could you make to more fully help students improve in those standards?
3. What actions could your school, department, or district take to support teaching and learning in these areas?

Your Ideas – Literacy Strategies

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Reading

Writing

Seed dispersal article:

links to reading standards

links to writing standards

Reading & Science Correlation

Reading Strategy	Inquiry Science
Activating background knowledge	Observing
Questioning	Hypothesizing
Searching for information	Designing Experiments Collecting data
Summarizing	Representing findings
Organizing graphically	

Writing Example – Lab Report

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Lab: Compare the Kinetic and Potential Energy for a golf ball going down ramps of varying heights

1. Write a hypothesis
2. Make a data table including

   Mass of ball, Length of ramp, Times for 3 trials

   Ave. time, Ave. Speed, Final Speed, Final KE,

   Initial PE, initial PE – final KE
3. Write the Conclusion

Criteria for a Conclusion

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1.

The purpose of this lab was to determin how height affects Kinetic energy. If the height of the ramp is higer, then the Kinetic energy of the ball will increase. The data of this lab supports the hypothesis. When the ramp was at .08m the ball had a final Kinetic energy was .023j. When the ramp was at a height of .49m the final Kinetic energy of the ball was .125j. That proves that the ball has more Kinetic energy when it rolls down a ramp at a higher height.

There was many possible errors that could have affected this lab. One possible error is that the timer may have not been started or stoped at the correct time. Another error could have been that all the calculations could have been done incorrectly, giving bad results. Another possible error could be that the height of the ramp was measured incorrectly.

In the future it would be interesting to use different kinds of balls. One area that could have been inproved is how we divided the work load up.

Golf Ball Conclusion

Hypothesis- if the ramp is a lot steeper then the golf ball will roll faster

- The hypothesis was correct. The higher the ramp was the faster the ball was. It was a greater kinetic energy. We had to use 3 books for the height. As we got more books from 1 to 3 the speed was greater every time. The table was big because of all the calculations. we had to find the velocity and kinetic energy to calculate most of the calculations. This was a pretty fun lab to do with the timers and golf clubs even though it took a longer time.

Conclusion	• Refers back to the hypothesis and answers the problem question. • Uses correct, sufficient and specific data to show that the hypothesis was supported or rejected. • Detailed and scientifically correct explanation for the experimental results. • Identification of a significant source of experimental error and a detailed discussion on how this could have affected the results. • Thorough explanation for how to prevent this error in the future. • Detailed identification of a related and significant future research possibility.	• 1 requirement not met. • Data is not sufficient or specific. • Explanation of results is not detailed. • Identification of an insignificant source of experimental error or a weak discussion on its affects. • Explanation is lacking detail. • Future research is related and significant but is lacking details.	• Both requirements not met. • Summary of data is incorrect. • Explanation of results is incorrect. • Source of error and/or its affects are incorrect. • Explanation is incorrect. • Future research is unrelated or unclear.	• No conclusion. • No conclusion • No conclusion. • No conclusion.. • No conclusion. • No conclusion.

3.

Conclusion

1) The purpose of this activity was to discover how potential and kinetic energy are related. The hypothesis unique to our group was if the ball is at a higher height, then it will have more potential and kinetic energy.

2) Our hypothesis was supported by the results of the experiment since every time we increased the heights the potential and kinetic energies also increased.

3) At the shortest height (0.75 m) the two energies were 0.0331 J and 0.000506 J, potential and kinetic respectively. Then when the ramp was moved up to 0.15 m the energies increased to 0.0662 J of potential energy and 0.00325 J of kinetic energy. The final and tallest height was 0.462 meters. At this height the potential energy was 0.204 J and the kinetic energy was 0.0151 J. All of these numbers show the trend of the higher the height the more the energy increases. In the end, the height increased 0.387 m, the potential energy increased 0.1709 J, and the kinetic energy increased 0.014594 J.

4) Within this experiment there were multiple places where errors may have occurred. The first place for possible error would be the in the timing. When the ball was released and when it exited the ramp may not have been perfectly timed since it was a human timing it and every human has reaction times that need to be calculated in. Also every time the ball was released it may have slightly moved the ramp down altering the height. This could have happened since we did not check the height of the ramp before we released the ball and the ramp might have been bumped. The last error is during this experiment two different people released the golf ball this may have changed the results since we may have released the ball differently and manipulated the balls descent.

5) You could continue this type of study by doing a similar experiment at more drastic height differences. Also you could switch it up by using different items and seeing how mass and weight will change all of the energy calculations.

Related Science Benchmarks

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Formulate a testable hypothesis, design and conduct an experiment to test the hypothesis, analyze the data, **consider alternative explanations and draw conclusions supported by evidence from the investigation.** 9.1.1.2.1

Communicate, justify and defend the procedures and results of a scientific inquiry or engineering design project using verbal, graphic, quantitative, virtual or written means. 9.1.3.3.1

Related Writing Standards

1. **Write arguments to support claims** in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.

2. **Write informative/explanatory texts** to examine and convey complex ideas and information clearly and accurately through the effective selection, organization and analysis of content.

4. Produce clear and coherent writing in which the development, organization, and style are **appropriate to task, purpose, and audience.**

5. Use a writing process to develop and strengthen writing…

6. Use technology to produce and publish writing and to interact and collaborate with others.

7. **Conduct short** as well as more sustained **research projects based on focused questions, demonstrating understanding of the subject under investigation.**

9. **Draw evidence from literary and informational texts** to support analysis, reflection, and research.

10. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes, and audiences.