



“What is ExploraVision and How Can I Use It?”

Wednesday, September 15, 2009

Introducing today's Presenters

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Teachers Association



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Today's Agenda

1. Introducing the Competition

What is ExploraVision and How Can I Use It?

Why should students participate? Prizes offered.

2. ExploraVision & NSES

3. How to Help Students Participate in ExploraVision

4. Motivating Your Team: Some Dos and Don'ts

5. Resources for Teachers and Students



“What is ExploraVision and How Can I Use It?”

Introducing the Competition



1. Introducing the Competition



How many of you here this evening have either participated or are familiar with ExploraVision?

Yes (✓) I have participated in ExploraVision

No (✗) I have never participated in
ExploraVision



1. Introducing the Competition

Sponsored by Toshiba

TOSHIBA
Leading Innovation >>>

Administered by NSTA





1. Introducing the Competition

What is ExploraVision? Why should students participate?

- Competition for all k-12 students provides a turnkey learning setting for building the skills – problem solving, team work, communication, and critical thinking, *FREE to enter and everyone receive something from us!*
- A hands-on & fun but well-structured science framework that inspires students
- Designed for students of all interest, skill & ability levels
- Students work in teams of 2-4 to select a technology, research how it works and why it was invented, and then project how that technology may change in the future.
- Open for Public/Private/Parochial/Home-Schools in U.S. and Canada
- Each team is guided or led by a teacher and optional mentor
- Easy to enter through online registration/enter
- Multiple enter is allowed = perfect for introducing to your class room



1. Introducing the Competition

About the competition

- Grades K-3
- Grades 4-6
- Grades 7-9
- Grades 10-12

Each entry category is judged separately





1. Introducing the Competition

Let's Pause for
Two Questions
from the Audience

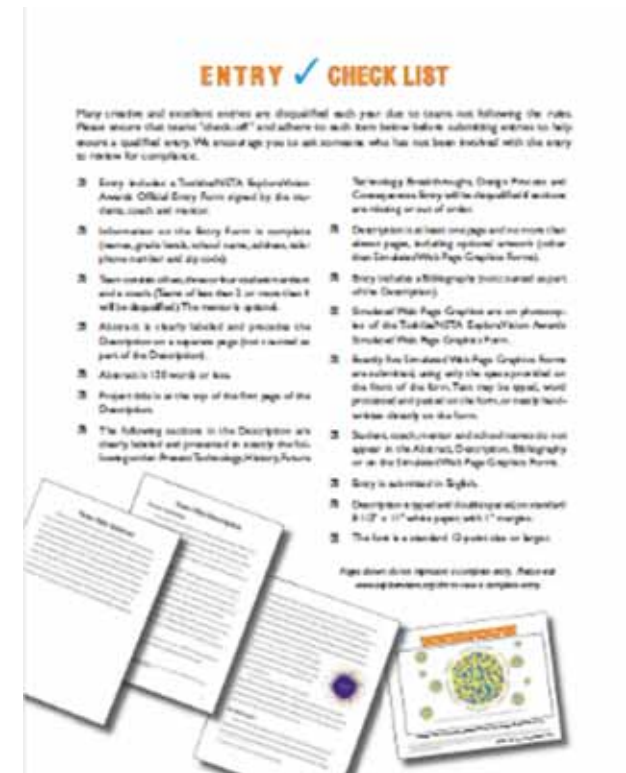




1. Introducing the Competition

Entry Components

1. Abstract
2. Description
 - 1) Present technology
 - 2) History
 - 3) Future technology – 20 years
 - 4) Breakthroughs
 - 5) Design Process
 - 6) Consequences +/-
3. Communication with web page *designs*
4. Bibliography
5. Web Page Graphics





1. Introducing the Competition

Everyone's a Winner!

- Entry gifts and certificates for all students, teachers and mentors, and discount for Toshiba computer products
- Honorable Mention Awards for 500 teams
- 24 Regional Winners; Toshiba laptop for each winning school and Toshiba HD camcorder
- 8 National Winners; expense paid trip to DC and to be on air with Bill Nye the Science Guy





1. Introducing the Competition

National Winners

- Eight teams
- Four first-place student team members each receive a \$10,000 U.S. savings bond
- Four second-place student team members receive a \$5,000 U.S. savings bond
- All team members attend gala awards weekend in Washington, D.C.





1. Introducing the Competition

- In order to win, ideas must focus on fairly complex and technologically sophisticated applications?

✓ True

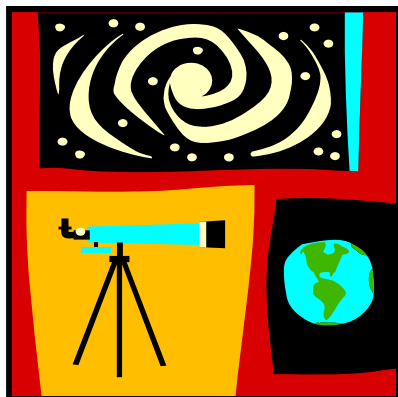
✗ False





1. Introducing the Competition

- Winning ideas have focused on things as simple as ballpoint pens and as complex as nanotechnology applications.





1. Introducing the Competition

Let's Pause for Two
Questions from the
Audience



“What is ExploraVision and How Can I Use It?”

ExploraVision & NSES



2. ExploraVision & NSES

- **The Curriculum Is Already So Time Consuming...**
- ExploraVision does require extra work for both teachers and students, but it is an excellent way to incorporate the National Science Education Standards into your class, to motivate students, and to help them learn to organize and communicate what they learn.





2. ExploraVision & NSES

Lets ask the audience...

Which standards do you believe closely align with ExploraVision?

	Performance-based assessments of science & problem-solving abilities
	Engaging students in problem-solving & critical thinking activities
	Teaching students responsibility for their own learning
	Building strong communication skills
	Working in cooperative learning groups
	Stressing science is for <u>all</u> students
	Encouraging interdisciplinary learning



2. ExploraVision & NSES

Standards Goal

- Moving towards performance-based assessments of science and problem-solving abilities

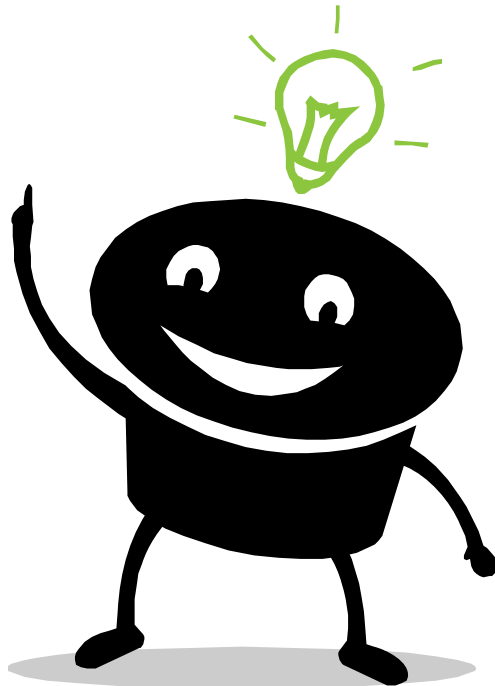
ExploraVision Opportunity

- ExploraVision requires that students write, draw and present their conclusions. This work can assist your assessment of the students' learning.





2. ExploraVision & NSES



Standards Goal

- Engaging students in problem-solving and critical thinking activities

ExploraVision Opportunity

- Designing ExploraVision entries provides an excellent opportunity for inquiry-based learning.



2. ExploraVision & NSES

Standards Goal

- Teaching students responsibility for their own learning

ExploraVision Opportunity

- ExploraVision requires student commitment and initiative, challenging students to take an active role in their learning.





2. ExploraVision & NSES

Standards Goal

- Building strong communication skills

ExploraVision Opportunity

- ExploraVision provides multiple opportunities for students to communicate verbally and in writing, as well as through art and technology.





2. ExploraVision & NSES

Standards Goal

- Working in cooperative learning groups



ExploraVision Opportunity

- ExploraVision entries are put together by teams of 2–4 students who must work together effectively if they are to be successful.



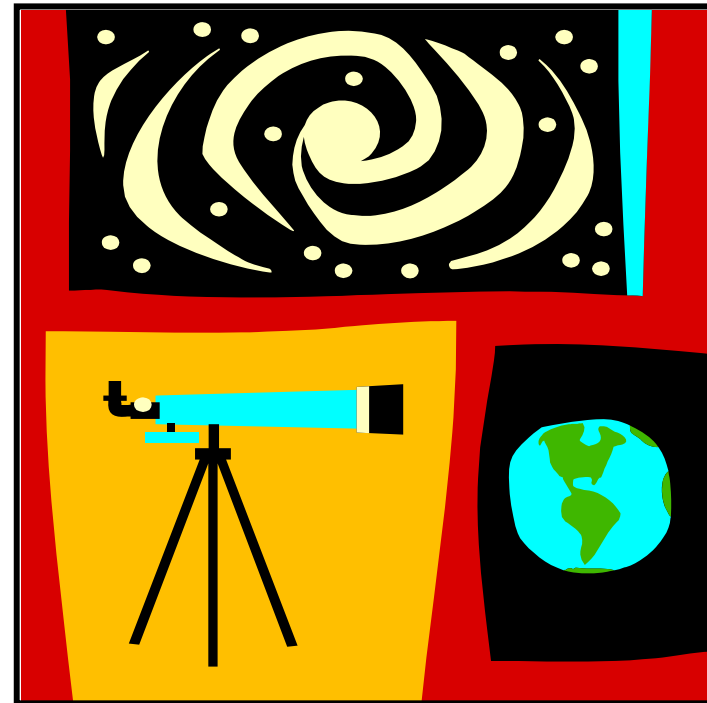
2. ExploraVision & NSES

Standards Goal

- Stressing science is for all students

ExploraVision Opportunity

- ExploraVision is for all students, not just the more academically motivated.





2. ExploraVision & NSES

Standards Goal

- Encouraging interdisciplinary learning

ExploraVision Opportunity

- ExploraVision teams must use language arts, math and social studies skills in addition to science.





2. ExploraVision & NSES

The process of putting together an ExploraVision entry will help your students understand:

1. The importance of invention in history
2. The scientific breakthroughs required to create an invention
3. The gradual “building block” nature of scientific progress
4. How science relies on constant improvement of technological tools in order to progress
5. That all new technologies have both positive and negative impacts on our lives



2. ExploraVision & NSES

Let's Pause for Two
Questions from the
Audience



“What is ExploraVision and How Can I Use It?”

How to Help Students
Participate in ExploraVision



3. How to Help Students Participate in ExploraVision

Teacher's roles will vary somewhat according to the age level of the student teams. But regardless of whether your students are first graders or high school seniors, you will need to:

- Sponsor your students
- Assign roles
- Facilitate





3. How to Help Students Participate in ExploraVision



- Seek assistance
- Encourage them
- Brainstorm



3. How to Help Students Participate in ExploraVision

- Push them
- Make sure that the students actually complete their entries and mail them or submit online on schedule





3. How to Help Students Participate in ExploraVision

Open-Ended Problem Solving:

One Key to Invention

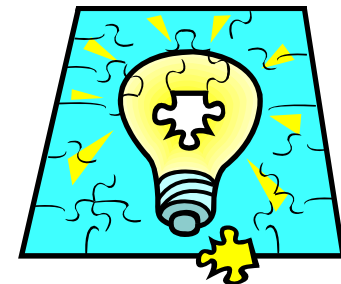
- **Open-ended problem solving is often used in engineering. It can be used as a way to structure your teams' ExploraVision efforts**



3. How to Help Students Participate in ExploraVision

Key Steps in Open-Ended Problem Solving

1. Identify the problem
2. Describe the problem in a “design brief,” including the constraints and limitations
3. Gather information
4. Brainstorm for solutions
5. Select a solution
6. Develop an implementation strategy
7. Design a prototype
8. Test
9. Redesign
10. Complete project





3. How to Help Students Participate in ExploraVision

- **Let's review...**
- **What can teachers do to help students participate in ExploraVision?**
 - A. Develop a great idea and do the project for them
 - B. Brainstorm, assign roles, offer encouragement
 - C. Discourage mentor involvement
 - D. Offer candy or other bribe





3. How to Help Students Participate in ExploraVision

Here are some sample **timelines** for your classroom:



		3-WEEK PROGRAM	2-MONTH PROGRAM	4-MONTH PROGRAM
Step 1: Introduction	Introduce the competition and review the rules. Give students time to brainstorm ideas. Officially register your team online or begin filling out the entry form.	Days 1-4	Week 1	Weeks 1-2
Step 2: Research Stage	Give the team some time to research their technology. If the team prefers to go in a different direction than their original idea, they have time to start with a new one. Optionally, find a mentor that fits the team and their idea.	Days 5-10	Weeks 2-4	Weeks 3-7
Step 3: First Draft	Require a draft of the current technology, history, and updates on their future technology.	Day 11	Week 5	Week 8
Step 4: Breakthroughs & Consequences Stage	Have the team analyze the consequences of their future technology and the breakthroughs necessary to achieve it. Point the team in the direction of some emerging technologies that may be useful.	Days 11-15	Weeks 5-6	Weeks 8-11
Step 5: Second Draft	Require a draft of the consequences, design process, and breakthroughs.	Day 16	Week 7	Week 12
Step 6: Complete Draft	Have the team work on their abstract, bibliography and web page graphics. The team should submit a complete draft of their project.	Days 17-19	Week 7	Weeks 12-14
Step 7: Revisions and Submission	Have the team make last minute revisions, complete the entry form with signatures, and mail complete entry to NSTA or submit online.	Days 20-21	Week 8	Weeks 15-16

“What is ExploraVision and How Can I Use It?”

Motivating Your Team:
Some Dos and Don'ts



4. Motivating Your Team: Some Dos & Don'ts

- One of the crucial roles of the teacher is to provide motivation at the appropriate times. But it is often just as easy to turn an idea off as it is to turn on. So remember:
- **DO:**
- **Help the team determine a schedule and timeline, and monitor their progress**
- **Coach them on being a team**
- **Give students feedback**
- **Make them famous**
- **If possible, provide them a little freedom from other class work**
- **Remind your team that every student who enters is a winner and will receive recognition**
- **ENCOURAGE, ENCOURAGE, & ENCOURAGE!**



4. Motivating Your Team: Some Dos & Don'ts

- DON'T:
- **Don't forget that an idea is a fragile thing. Three easy ways to squash ideas:**
 - “Well, I think it's a little too...”
 - “I'm not sure this is what we're looking for...”
 - “Ha, ha, ha, ho, ho, hee, hee...”
- **Don't make the process too complex. Remind students that most inventions arise from simple ideas.**
- **Don't ignore the obvious. Winning entries are not always glitzy. Have them think about tasks they do every day – are there ways to do them better?**



4. Motivating Your Team: Some Dos & Don'ts

Let's Pause for Two
Questions from the
Audience



“What is ExploraVision and How Can I Use It?”

Resources for Teachers



5. Resources for Teachers



- **Visit the ExploraVision web site:**
<http://www.exploravision.org>
 - How to register and enter online
 - How to obtain entry materials
 - The entry steps
 - Web seminar archive
 - Prizes, Rules and FAQ's
 - Past winners showcase
 - Videos of interviews from teachers and students
 - Sample timeline



5. Resources for Teachers & Students

- Join the ExploraVision Facebook community at:
<http://www.facebook.com/ToshibaNSTAExploraVision>
- Or follow ExploraVision on Twitter at
<http://www.twitter.com/exploravision>



Thank you!

Other questions?

Please email exploravision@nsta.org or call
1-800-EXPLOR-9

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