What Is ExploraVision and How Can I Use It?

Presented by: Sara Lepkofker and Eric Crossley

September 12, 2012
6:30 p.m. – 8:00 p.m. Eastern time
Introducing today’s presenters…

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National Science Teachers Association

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9th grade science teacher
Northview High School
Duluth, GA
Today’s Agenda

1. Introducing the Competition
   What is ExploraVision and how can I use it?
   Why should students participate?
   Prizes offered

2. How to Help Students Participate in ExploraVision

3. Motivating Your Team: Some Dos and Don’ts

4. Resources for Teachers and Students
“What is ExploraVision and How Can I Use It In My Classroom?”

Introducing the Competition
1. Introducing the Competition

Have you participated in ExploraVision or are you familiar with the competition?

A. I have participated in ExploraVision
B. I haven’t participated, but I am familiar with it
C. I haven’t participated and I don’t know much about it
1. Introducing the Competition

Sponsored by Toshiba

Administered by NSTA

National Science Teachers Association
1. Introducing the Competition

What is ExploraVision? Why should students participate?

• Competition for all K-12 students that provides a turnkey learning setting for building skills – problem solving, teamwork, communication, and critical thinking, FREE to enter and everyone receives a gift!

• A hands-on and fun but well-structured science framework that inspires students

• Designed for students of all interest, skill, and ability levels

• Students work in teams of 2-4 to select a technology, research how it works and why it was invented, then project how it may change in the future
1. Introducing the Competition

What is ExploraVision? Why should students participate? (Continued)

• 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/mailed projects
• Now more aligned with the National Research Council’s Framework for K-12 Science Education!
• Multiple projects allowed = perfect for introducing to your classroom
1. Introducing the Competition

About the competition
• Grades K-3
• Grades 4-6
• Grades 7-9
• Grades 10-12

Each grade category is judged separately
Let’s pause for questions.
1. Introducing the Competition

**Project Components**

1. Abstract
2. Description
   1) Present technology
   2) History
   3) Future technology – 20 years
   4) Breakthroughs
   5) Design Process
   6) Consequences +/-
3. Bibliography
4. Sample Web Pages
1. Introducing the Competition

Everyone’s a Winner!

• 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
• Eight National Winners; expense paid trip to D.C. 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 (maturity)
- Four second-place student team members receive a $5,000 U.S. savings bond (maturity)
- All team members attend gala awards weekend in Washington, D.C.
1. Introducing the Competition

Prize Pack Giveaways

For the schools

• The school with the largest number of qualified teams will receive a $1,000 tech upgrade from Toshiba
• 24 Regional Winners: Toshiba Laptop for each winning school and Toshiba HD Camcorder for each team member

For the teachers

• The coach in each grade level with the largest number of qualified teams will receive his or her very own Toshiba Tablet
In order to win, ideas must focus on fairly complex and technologically sophisticated applications.

✅ True  ❌ False
Winning ideas have focused on things as simple as ballpoint pens and as complex as nanotechnology applications.
Let’s pause for questions.
“What is ExploraVision and How Can I Use It In My Classroom?”

How to Help Students Participate in ExploraVision
2. 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
2. How to Help Students Participate in ExploraVision

- Seek assistance
- Encourage them
- Brainstorm
- Include ExploraVision as part of the curriculum
2. How to Help Students Participate in ExploraVision

- Push them
- Make sure that the students actually complete their projects and mail them or submit online on schedule
2. 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.
2. 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
2. 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
2. How to Help Students Participate in ExploraVision

Here are some sample timelines for your classroom:
<table>
<thead>
<tr>
<th>Step 1: Brainstorming</th>
<th>3-WEEK PROJECT</th>
<th>2-MONTH PROJECT</th>
<th>4-MONTH PROJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learn about the competition’s rules. Show examples of past projects and have students name existing technologies they would like to explore. Form groups and give students a deadline to choose a topic.</td>
<td>Days 1–4</td>
<td>Week 1</td>
<td>Week 1</td>
</tr>
</tbody>
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<tr>
<th>Step 2: Getting to Know the Subject</th>
<th>3-WEEK PROJECT</th>
<th>2-MONTH PROJECT</th>
<th>4-MONTH PROJECT</th>
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<tr>
<td>Teach students about different research methods and about “sources” or a bibliography. Lead group discussion on interesting topics and what is already known about the technologies. Share various sources that can be used such as magazines, the Web, and books. Based on research done, each student should write a timeline and a summary of one or more topic’s history. Find a mentor that fits the team and their idea.</td>
<td>Days 5–10</td>
<td>Weeks 2–3</td>
<td>Weeks 2–4</td>
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<tr>
<th>Step 3: Understanding Technological Change</th>
<th>3-WEEK PROJECT</th>
<th>2-MONTH PROJECT</th>
<th>4-MONTH PROJECT</th>
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<tr>
<td>Have students present their examples in front of the class. Lead a discussion about how that technology could have evolved. Working in groups, students collect ideas about how their technology could evolve in 20 years, analyzing the consequences of their future technology and the breakthroughs necessary to achieve it. Present those ideas to the class. For homework have students refine drafts of their teams’ “Future Technology and Breakthroughs” project section.</td>
<td>Days 11–14</td>
<td>Weeks 4–5</td>
<td>Weeks 5–8</td>
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<tr>
<th>Step 4: Testing the Idea</th>
<th>3-WEEK PROJECT</th>
<th>2-MONTH PROJECT</th>
<th>4-MONTH PROJECT</th>
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<tr>
<td>Each group should present its future technology to the class. Encourage students to consider the pros and cons of their visions. For homework, work with students on the “Consequences” section.</td>
<td>Days 15–16</td>
<td>Week 6</td>
<td>Weeks 9–12</td>
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<tr>
<th>Step 5: Presenting the Project</th>
<th>3-WEEK PROJECT</th>
<th>2-MONTH PROJECT</th>
<th>4-MONTH PROJECT</th>
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<tr>
<td>Students prepare the project entries and draw out plans for the sample web pages (5) including images of future technologies. For homework, complete all sections of the description and begin to write the abstract and bibliography.</td>
<td>Days 17–20</td>
<td>Week 7</td>
<td>Weeks 13–15</td>
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<tr>
<th>Step 6: Final Look</th>
<th>3-WEEK PROJECT</th>
<th>2-MONTH PROJECT</th>
<th>4-MONTH PROJECT</th>
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<tbody>
<tr>
<td>Make last minute revisions. Complete Project Entry Form and submit a complete draft of the project.</td>
<td>Day 21</td>
<td>Week 8</td>
<td>Week 16</td>
</tr>
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</table>
Let’s pause for questions.
“What is ExploraVision and How Can I Use It?”

Motivating Your Team: Some Dos and Don’ts
3. 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
3. Motivating Your Team: Some Dos & Don’ts

**DO (Continued):**

- 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!
3. 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…”
3. Motivating Your Team: Some Dos & Don’ts

**DON’T (Continued):**

- Don’t make the process too complex. Remind students that most inventions arise from simple ideas.
- Don’t ignore the obvious. Winning projects are not always glitzy. Have them think about tasks they do every day – are there ways to do them better?
Let’s pause for questions.
“What is ExploraVision and How Can I Use It?”

Resources for Teachers
4. Resources for Teachers and Students

Visit the ExploraVision web site:

http://www.exploravision.org

- How to register and enter online
- How to obtain project materials
- The entry steps
- Web Seminar archive
- Prizes, rules, and FAQ’s
- Past winners showcase
- Videos of interviews from teachers and students
- Sample timelines
4. Resources for Teachers and Students


- Or follow ExploraVision on Twitter at: [www.twitter.com/ToshibalInnovate](http://www.twitter.com/ToshibalInnovate)
Thank you!

Other questions?

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