
Using the Visual Ranking Tool to Target Thinking Skills

Activities

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MODULE 5

Using the Visual Ranking Tool to Target Thinking Skills

Description: In this module, you explore the advantages of using the *Visual Ranking Tool* and consider how you might integrate this thinking tool into your Unit Plan.

Activity 1: Looking at Visual Ranking in Action

To begin thinking about how you might integrate the *Visual Ranking Tool* into your unit, review how thinking tools, and *Visual Ranking* in particular, may be used in the classroom.

Step 1: Reviewing the Benefits of Thinking Tools

You now have experience using three online thinking tools. In each of these tools, you created and saved visual representations of your thinking. Projects enhanced by technology can be very powerful.

Technology is most powerful when used as a tool for problem solving, conceptual development, and critical thinking. With technology, students can spend...more time creating strategies for solving complex problems and developing a deep understanding of the subject matter.

"The Learning Return on our Educational Technology Investment"

Cathy Ringstaff and Loretta Kelley

Review the benefits of using online thinking tools in your classroom.



Note: Research behind the online thinking tools is available in the *Thinking Tools* folder on the Curriculum Resource CD.

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Benefits of the Online Thinking Tools

Students:

- Improve collaboration and higher-order thinking skills
- Engage in discussion and understand complex ideas
- Develop visual representation skills
- Use precise language
- Strengthen verbal argumentation skills through peer review
- Explain, justify, and generalize (mathematical reasoning across the curriculum)
- Examine other perspectives, such as peers, experts, or community members

Teachers:

- Shift to student-centered instructional practices
- View the progression of the students' thinking, ideas, and research
- Can quickly and easily set up and manage as many team projects as needed
- Can access projects anywhere and anytime using an Internet-connected computer and a free plug-in for Macromedia Flash*

Step 2: Introducing List Ranking in the Classroom

Students often brainstorm lists for a variety of reasons, such as ranking their favorite songs or planning which colleges to consider. When students rank one college higher than another, for instance, they do so by creating a personal set of criteria, narrowing the list of all schools to a few that meet their criteria, and then ordering the final list by evaluating how a particular college ranks relative to the others in the list.

Any project that has students prioritizing or choosing among options can benefit from the *Visual Ranking Tool*. Below are several prompts for *Visual Ranking* that students can use in a variety of subjects and grade levels:

- Rank the items in the supply list in order of usefulness when setting up a base camp and research station on the moon.
- Considering maintenance costs, size, temperament, and popularity, which animals would be good pets for the city? Put your choices in order.
- Based on the interests of the community stakeholder group your team represents, rank the importance of possible features for a new public park.

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- Which development choices have the least effect on the river environment and salmon population?
- Put the list of inventions in order of importance to modern life. After research and debate, rank again and compare your first ranking with your later ranking.
- What are the most important elements of a good mystery story?

The *Visual Ranking Tool* makes the ranking process easy. With a simple click and drag, students move items to any position in the list. Working in teams, they collaborate and negotiate their reasoning. The *Comment* feature of the tool gives students a place to record their rationales. When teams finish ranking their lists, they can compare results with their classmates' rankings and discuss differences and similarities.

The *Visual Ranking Tool* displays how closely the lists match and shows the correlation between two rankings.

Prompts for ranking lists can have multiple uses when students are asked to rank a list according to one set of criteria, and then again, using another set of criteria. This allows students to gain insight into various perspectives.

The *Visual Ranking Tool* helps students analyze and evaluate items in a list by:

- Identifying criteria for sorting
- Refining the criteria
- Prioritizing items in the list based on criteria
- Justifying priorities
- Making decisions by seeking consensus or negotiating new decisions

By comparing lists visually students are:

- Examining and comparing reasoning for priorities
- Negotiating and adjusting ranking to explore correlation
- Understanding multiple perspectives
- Learning from each other
- Seeking consensus

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When brainstorming the initial list with your students, consider opening a word processing document and using a projector to display the list. The list can be finalized by adding and deleting words. Using a word processing file has many benefits:

- It allows you to easily edit and refine your list.
- You do not need to show your students your Teacher Workspace.
- You do not need an Internet connection.
- You can view the entire list at once; whereas, if you enter the list directly into the tool, your full list may not be viewable. Although the text-entry box is scrollable, it is somewhat small.
- You can easily alphabetize the list. Alphabetizing the list is useful to ensure no unintentional bias in the initial sorting and, later, to see when a list has not been sorted. (See Word Processing Skill 7.19)

Once you have the final list, log in to the Teacher Workspace. You can have the project already set up with placeholder items in the List to Sort section. Copy and paste the final list from the word processing document into the preset project in the Teacher Workspace and click Submit after all items have been entered.



Step 3: Brainstorming a List

Earlier, you looked at the design of the *Grow a Business* unit plan. (See page 3.17 and Appendix E.05.) During this activity, you experience how the *Visual Ranking Tool* is used in this elementary unit. This activity helps you understand how to:

- Incorporate a whole-class brainstorming session
- Use different perspectives in the ranking process
- Integrate the *Visual Ranking Tool* into a classroom project

Imagine you are a student in this classroom. As a part of the unit, your teacher asks you to use the *Visual Ranking Tool* to examine and rank a list of flowers that your class is considering selling.

1. In small groups, brainstorm a list of flowers that you think would make a good gift for Mother's Day based on your assigned perspective (mother, florist, or student). List them below.

2. Share your list with the whole group. As the lists of flowers are shared, collapse any items that are too similar. For example, *red roses* and *yellow roses* would be hard to distinguish when placing items in rank order, so you would select just roses.

Note: Although red roses and yellow roses symbolically have very different meanings, this ranking is currently concerned with simply ranking different flower species.

3. Once the list is finalized to a total of 7-12 items, the instructor enters the final list in the tool workspace to make it ready for sorting.

Note: When using the *Visual Ranking Tool*, try not to have too few or too many items. With too few items to rank, it may be difficult to see much of a variation when comparing lists. With too many items, teams may have difficulty ranking a large list and/or understanding the distinction between items. A list of 7-12 items works best.



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Step 4: Logging in as a Student

Practice ranking a list using the *Visual Ranking Tool*. The instructions below are the same instructions your students use to rank a project list.



1. Open *Visual Ranking* from your Favorites. (www.intel.com/education/visualranking)
2. Click the **Student Log-In** link.
3. Your instructor will give your team the teacher ID, team ID, and password. Write them on the lines below. Your Team ID indicates the perspective your team should take when ranking the list.

Teacher ID: _____

Team ID: _____

Password: _____

4. Enter your log-in information, then click **Sign In**.



Note: All of the teams in the class use the same teacher ID, so it can be written on the board. The instructor needs to let each team know their individual team ID and password. If teams forget their passwords, all passwords can be viewed in the *Teacher Workspace*. (See Teaching Tools, Visual Ranking Tool Skill 1.12.)

5. The *Student Workspace* page will open. Under *Project Name* in the *Visual Ranking Projects* section, open the project, **Ranking Flowers**. (See Teaching Tools, Visual Ranking Tool Skill 1.3)
6. The *Visual Ranking Tool* will open with the final brainstormed list of flowers.

Refer to the following skills in the Intel® Education Help Guide for this section:

- Visual Ranking Tool Skill 1.3: Opening a Visual Ranking project in the Student Workspace
- Visual Ranking Tool Skill 1.12: Viewing or editing team information

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Refer to the following skills in the Help Guide for the skills on page 5.xx:

- Visual Ranking Tool Skill 1.15: Ranking items in a list
- Visual Ranking Tool Skill 1.16: Commenting on an item
- Visual Ranking Tool Skill 1.20: Comparing lists
- Visual Ranking Tool Skill 1.21: Understanding results
- Visual Ranking Tool Skill 1.27: Printing a report
- Word Processing Skill 7.19: To sort or change the order of rows based on certain information



Step 5: Ranking and Comparing the List

Practice ranking the list using the *Visual Ranking Tool*. You are ranking the list according to what you think would sell best for Mother's Day flowers. Later in the unit, students are asked to rank the list according to the results of a flower popularity survey, the anticipated cost of each type of flower, and the projected profit.

Below are the same instructions your students would use to rank a project list. Use the *Help Guide* if you need assistance in completing any technology skills identified below.

1. Rank the list according to your team's assigned perspective as to what would sell best as Mother's Day flowers. As team members, you must agree on the position of each item in the list. (See Teaching Tools, Visual Ranking Tool Skill 1.15.)
2. Add rationales for your rankings in the items' *Comment* boxes. Enter ranking rationales for at least the top, bottom, and two middle items. (See Teaching Tools, Visual Ranking Tool Skill 1.16.)
3. Talk with another team and compare your lists. Discuss the differences between your rankings. Try to negotiate a common ranking.

Note: For information about correlation, view Understanding Correlation in the *Thinking Tools, Visual Ranking Tool* folder on the Curriculum Resource CD.

4. View the class average and discuss whether it reflects the viewpoint of any one team. Discuss the limitations and uses of class average and the types of discussions you could have with your students. (See Teaching Tools, Visual Ranking Tool Skills 1.20 and 1.21.)



Note: When creating your own teams, be sure to unassign any extra or unused teams so that the class average comparison is not skewed.

5. Click the **Show Report** button to view a report of your ranking and comments. (See Teaching Tools, Visual Ranking Tool Skill 1.27.)

Note: If you have a pop-up blocker, you need to turn it off for this feature to work. Another way to override your pop-up blocker is to hold down the **Ctrl** key as you click the link to view the maps. **Macintosh* users:** You may be able to override a pop-up blocker by holding down the **Command** key as you click the link.

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Step 6: Reflecting on Your Use of the Tool



After the sorting activity, reflect on your experience with the tool and discuss the following questions:

- How important were discussions and negotiations during the ranking activity?
- How did explaining and justifying your ranking in the items' *Comment* boxes help you establish the final ranked list?
- How did your ranking differ from other teams? Did their comments help you understand other ways of thinking about the items?
- What did you discuss with the other teams?
- Did reading other teams' comments and discussing the lists with them influence your team's thinking about how you ranked the items?

Benefits of the Visual Ranking Tool

Students:

- Learn the tool easily and can use it right away
- Represent their thinking visually using an interactive and dynamic tool
- Discuss, defend, debate ideas, and reach consensus
- Explain reasoning, analysis, and evaluation processes
- Understand perspectives of peers, experts, and community members
- Gain mathematical understanding of class average and the correlation coefficient
- Learn to organize ideas

Teachers:

- Provide students with unique perspectives by including outside participants
- Give teams individualized support by logging in to view and comment on each team's ranking and reasoning
- Can quickly set up and manage multiple projects at once



Note: View additional benefits of *Visual Ranking* in the *Thinking Tools, Visual Ranking* folder on the Curriculum Resource CD.

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Activity 2: Viewing Project Ideas

Step 1: Reviewing the Power of Visual Ranking

In this activity, review how the *Visual Ranking Tool* can be used to target thinking at different levels. *Visual Ranking* has been designed to support the types of activities that cover a range of cognitive skills, such as those described by Bloom’s Revised Taxonomy.

This tool develops students’ higher-order thinking skills by:

- Requiring collaboration, cooperation, and persuasion
- Promoting classroom discussion, argumentation, and defense of individual or team choices
- Supporting students’ construction of understanding and their engagement in cognitive operations

Uses of Visual Ranking Classified by Bloom’s Revised Taxonomy	
Remembering	<ul style="list-style-type: none"> ▪ Recreate the order of items in a series (e.g., how a bill becomes a law) ▪ Order objects along a scale (e.g., distance of planets from the sun)
Understanding	<ul style="list-style-type: none"> ▪ Use the item’s Comment box to document student’s comprehension (e.g., place automobile models in environmental order by combining gas mileage and pollution output)
Applying	<ul style="list-style-type: none"> ▪ Order items based on objective, calculated, or interpreted data
Analyzing	<ul style="list-style-type: none"> ▪ Organize, differentiate, compare, and contrast items (e.g., compare the effectiveness of various fertilizers; sort the frequency of eye and hair color combinations in the class) ▪ Compare one’s own ideas with other students’ results (e.g., rank the most essential components of a park, considering safety, cost, and popularity; after individual team rankings, the class must come to a consensus)
Evaluating	<ul style="list-style-type: none"> ▪ Establish and apply criteria and value to each item and justify that placement (e.g., rank industries that should be pursued to open offices or factories in our town, considering the effects on community revitalization and the environment) ▪ Persuade, educate, or convince others (e.g., compare various investment choices and make an expert recommendation to a prospective client)
Creating	<ul style="list-style-type: none"> ▪ Construct new knowledge by ranking items, events, traits, etc., according to criteria they develop (e.g., rank the following world events according to their impact on your life today)

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Step 2: Considering How the Visual Ranking Tool Can be Integrated into a Classroom Project

The *Visual Ranking Tool* is open-ended and content free; therefore, it can be integrated into a variety of existing unit and project plans.

Strategies to consider:

- Use the *Visual Ranking Tool* throughout a project. As a pre-activity or pre-assessment, *Visual Ranking* helps students discuss prior knowledge and identify areas to research. As a mid-unit activity, the tool helps students sort and prioritize ideas or concepts. At the end of the unit, the tool helps students define final conclusions and may be used in assessment.
- Have students compare earlier lists with final lists. Students can examine how opinions change over time and reflect on what they learned.
- Sort a list from different perspectives. For example, in a literature activity, student teams can take on the role of different characters, and then sort according to those characters' points of view. After student teams have sorted their lists, they can discuss how and why their rankings differ.
- Extend the learning community by including outside experts, students in other classrooms or schools, parents, and others as team members. Including people from outside the classroom adds opportunities for deeper discussions about the concepts being studied. Because the tool is web-based, team members—even those outside of your classroom—can contribute their rankings and join the discussion from anywhere.
- Promote collaboration, negotiation, and communication skills by having students work in teams to rank lists.

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Step 3: Viewing Sample Projects



1. Open *Visual Ranking* from your Favorites.
(www.intel.com/education/visualranking)
2. Click **Project Examples**.
3. Review the units in both **Unit Plans** and **Project Ideas**.
4. Select two or three project samples and read through the unit summaries and descriptions. Note how the *Visual Ranking Tool* is used in each.

Note: See additional project ideas starting on Appendix C.03 and the sample project plans, River City Water and Grow a Business, starting on Appendix E.01 and E.05.
5. Identify and note any interesting uses of the *Visual Ranking Tool* in the project samples you review.

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Activity 3: Thinking About Your Unit

In the next module, you will try out an idea for your unit that incorporates using the *Visual Ranking Tool*. Brainstorm some ideas for effective uses of *Visual Ranking*. You may also want to refer to the Project Rubric on page 2.18-2.19 to help clarify your ideas.

You need to finalize the foundational details of your unit (curricular topic, targeted standards, and Curriculum-Framing Questions) before the next module. Although these details will continue to be refined in the upcoming modules, if you have not yet committed yourself to a specific unit topic, you should decide on one prior to Module 6.

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Extension Activity: Understanding Best Practices with Visual Ranking

The following resources are available to you for self-study or as an optional extension in your course. Complete Step 1 and/or Step 2 to view strategies and project ideas for using *Visual Ranking* in the classroom.

Step 1: Viewing Instructional Strategies

View best practices for planning, implementing, and assessing a project that integrates the *Visual Ranking Tool*.



1. Go to: www.intel.com/education/visualranking
2. Click **Instructional Strategies**.
3. Click the categories of interest: **Planning a Project, Implementing a Project, or Assessing Work**.

Step 2: Viewing Visual Ranking Project Ideas

Although you had an opportunity to view a few project ideas earlier in this module, if you have not decided on a project for your unit, you may want to explore more projects that integrate the *Visual Ranking Tool*.



1. Go to: www.intel.com/education/visualranking
2. Click **Project Examples**.
3. View projects that integrate the *Visual Ranking Tool* in either **Project Ideas** or **Unit Plans**.

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References

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Ringstaff, C. & Kelley, L. (2002). *The learning return on our educational technology investment: A review of findings from research 2002*. San Francisco: WestEd Regional Technology in Education Consortium. Retrieved from:
www.wested.org/online_pubs/learning_return.pdf

Module 5

Using the Visual Ranking Tool to Target Thinking Skills

Use this summary to review this module's main points and check for understanding.

Module 5 Summary

Review the central ideas in this module and the plans or materials you created to help improve student learning.

Module 5 Key Points:

- Any project that has students prioritizing, choosing among options, and/or evaluating different perspectives could benefit from the *Visual Ranking Tool*.
- The *Visual Ranking Tool* can be used at any stage of a learning project: to help students discuss their prior knowledge, put learning in a new context, or to assess or reflect on learning.

Accomplishments:

- Practiced brainstorming and ranking a list as it would be done in a classroom
- Explored the strengths of the *Visual Ranking Tool* to determine its potential use in my unit

In the following modules, we build on these concepts as we discuss ways we can support and encourage higher-order thinking skills by using thinking tools.