

# Overview - 2013 Assessment

## Plugged In: Analyzing Teen Media Use

### Task Level

Benchmark III

### Time Frame

Plan about three weeks for students to complete the task. Schedule in-class time, if needed, for students to access the Internet and to complete their research. Other work may be in or out of class, at teacher discretion.

### Common Core State Standards Addressed

Standards for Scientific Practice

(Framework for K-12 Science Education. Public Draft released in July 2011)

#### **ETS2.B: Influence of Engineering, Technology and Science on Society and the Natural World**

How do science, engineering, and the technologies that result from them affect the ways that people live? How do they affect the natural world?

Grade 12 Endpoints:

- Modern civilization depends on technological systems, including those related to agriculture, health, water, energy, transportation, manufacturing, construction, and communications.
- Widespread adoption of technological innovations often depends on market forces or other societal demands, but it may also be subject to evaluation by scientists and engineers and to eventual government regulation.
- Analysis of costs, environmental impacts and risks, as well as of expected benefits, is a critical aspect of decisions and technology use.

### Prerequisite Science Knowledge and Skills

Use the following list of assumed knowledge and skills to determine the appropriateness of this task for your students, in order to make it a fair assessment.

- Make predictions
- Conduct independent research using appropriate sources

- Summarize research results in written form

## **Description**

New technologies can have enormous impacts on society. For example, today's youth are used to constantly accessing technology and may not even realize the number of hours that they spend plugged in to technology. This STEM task begins with students making predictions about their own use of Internet, mobile, and broadcast technologies, keeping individual logs for a week. After comparing their personal results to class members' results, they will research national and international trends in the use of technology. Finally, as students make predictions about long-term changes to technology, they will develop a proposal for a new product that will address one or more issues related to technology use in the future.

# Instructions for the Teacher

## Plugged In: Analyzing Teen Media Use

### Preparation

About using this task with your students: Though classroom differentiation is instructionally sound, ThinkReady tasks must be delivered as written in order to maintain their integrity as performance assessments. **If a task is modified, it should be considered a formative assessment for classroom use only, and student work samples that are obtained from modified tasks should not be graded or submitted in the ThinkReady system.**

Make a copy for each student of the Student Task information and the scoring guides at the appropriate benchmark. You may distribute all pages of the Student Task information at the start of the task or provide pages individually as students are ready for them.

Provide access to computers, the Internet, and a printer for students' research. If available, provide access to computers with word processing software for students to record their work and to create their final work product.

Students may benefit from access to some subscription-based resources, depending on their individual projects. Potentially useful sources could include publications such as *Education Week*, the *Chronicle of Higher Education*, *Science News*, and MIT's *Technology Review*, as well as the *New York Times* and research journals, such as those published by the National Academies, the IEEE, AAI, and ISTE.

Become familiar with sources of information on teens' use of mobile and online technologies in the U.S. and abroad, and the potential impacts of these trends on such issues as teen health, employment practices, educational innovation, and the development of products.

Credible sources of information regarding U.S. teens' use of connected technologies can be found online and include the Pew Internet and American Life reports; Project Tomorrow's Speak Up surveys, and the Horizon Report's predictions about technology use in K–12 and higher education over the next five years.

Information about student use of connected technologies internationally may be difficult to find. One good source is UNESCO, which convened a "Mobile Learning Week" in late 2011 and has produced a series of working papers which examine the topic by region (Latin America, Asia, Europe, etc.).

### Administering the Task

Students will produce two different products to submit for ThinkReady tasks. The first part of the task has students label each component of the Key Cognitive Strategies (such as *Hypothesize*) from the *Directions*. These sections include explanations and reflections about what students are thinking and doing. Once this preliminary work is done, students use appropriate information produced for each

component to create the final product(s) that the original task instructions require.

Distribute the Student Task Information pages. Have students complete the name and course information on the cover page. Explain that students will submit all their work attached to this page, and they should *ONLY* write their names *on blank backs* of all other pages they submit. (Before they submit their work, you will facilitate a check by students to remove their names from pages as needed.)

Use this script and then have students read The Task on page 2: **How do communications technologies affect the way people live? This is a huge question that is made more complex because communications technologies are changing rapidly. New gadgets, channels, applications, and communities are introduced and discarded almost overnight. As part of this task, you will be conducting a scientific inquiry that begins with predicting and observing your own behavior, then researching trends in the U.S. and elsewhere.**

Clarify features of the real-life context that may be unfamiliar to some students, such as types and variety of communications technologies and social media, pointing out that “older” technologies, such as televisions and landline phones, are technologies that may be included in their research.

Continue, using this script: **Based on your research and data, you will develop a proposal for a new technological product. Zero in on a particular pattern, trend, question, or impact of technology that you could study further. Propose a solution that will resolve one or more of these issues.**

Distribute the scoring guides. Introduce or review the structure of the guides. Facilitate discussion of how students can use the scoring guides while working through the task. If students are new to using the guides, consider discussing the guides for one Key Cognitive Strategy at a time as students approach each part of the task. You may facilitate understanding of the guides in several ways (for example, by holding a class discussion, by having students write the expectations in their own words, or by considering expectations at performance levels *above* and *below* the level of this task).

Continue, using this script: **Make sure you record all the thinking, justifications, and explanations for the work you do.**

Let students know when they will work on the task and about how much time you expect they will need. Include due dates for parts of the task, if you wish. If students will use computers or other task-specific materials, provide instructions on accessing them.

## Student Work Methods

Students should work independently throughout this task.

Remind students to review the performance expectations in the scoring guides as they work.

Do not provide prompts beyond those in the task. You may paraphrase instructions or ask questions to elicit student understanding in order *to help students understand what they are being asked to do*. Similarly, you may paraphrase the scoring guides or ask questions of students to clarify performance expectations. By avoiding over-prompting or excessive scaffolding, the task is a true assessment of students' current abilities.

In order to give students feedback on their rough draft, you may provide feedback yourself, engage students in a peer review process, and/or ask them to do a self-review. When providing student feedback, it is appropriate to quote or paraphrase the scoring guides. It is not appropriate to give direct instructions on how to “fix” the work. You should be giving hints, not correcting students’ work. If students will provide peer review, explain these guidelines to them.

Remind students to keep all drafts and their feedback for submission upon completion of the assessment.

Once students receive feedback on drafts they produce, have them use the *Assessing Your Work* sheet to reflect on the completeness and quality of their work before revising final versions for submission. Explain that they should score their work and defend their scores for each component using scoring guide language.

To collect students’ work, use this script: **Collect each section of your work and organize it in the order presented in the Directions—by Key Cognitive Strategy. After that, attach your drafts, including the final draft. Remember that your name should only appear on the cover page and on blank backs of other pages. Your name should not be visible on pages that show your work.**

Provide time for students to black out their names where necessary.

## Facilitate Reflection

After students have submitted their work, hold a class discussion to facilitate reflection on the experience. Was this problem like any others students have solved? How might they use what they have learned about the process of solving and communicating their work on other Science problems? In other situations?

Include discussion of methods, solutions, and implications to help students gain more understanding of how to use the Key Cognitive Strategies to solve complex problems. The goal is to develop students’ insight into the nature and complexity of real-world problems.

## Vocabulary

- Adolescents
- Design proposal

## Extensions

- Students could research the process of taking a proposal from idea to market. With parental permission, a student may even consider placing a proposal on [kickstarter.com](http://kickstarter.com) or a similar venue to try to make their idea a reality.

# Solutions

Multiple hypotheses and strategies are possible in completing this task. Students may focus on many different aspects of technology and make any number of predictions about the ways that it might change in the short term and in the long term, as well as choose from a wide variety of concerns to research.

For example, students may choose to focus on the effects of screen time on sleeping patterns or the risks to hearing from ear buds, and then propose a solution. Their product proposal could be anything from a new social media platform to a new technological device, accessory, application, game, and so on.

An Emerging Strategic Thinker will demonstrate some insight by making connections between technology use patterns and a clear prediction for short- and long-term technological trends and product development. However, the student performing at this level may still display some lack of connection or integration in the final work product. The prediction and product suggestion might lack a fully logical, thought-out explanation or obvious connection in one or more small ways that do not detract from the overall quality of the work product.

During their research on individual topics, students will be structuring and systematically collecting data, making predictions, analyzing patterns, and comparing results of these data sets. They will need to identify and synthesize evidence from personal, local, national, and international sources, and make considered judgments about what is credible and applicable.

Student's data collection tools for tracking their own and their classmate's technology usage should be clear and thorough, allowing them to capture many types of technologies, including older ones such as landline phones, television sets, and radios. Strategic Thinkers may evaluate the performance of the data collection tool and discuss questions of bias – such as the impulse to alter actual online behavior to fit a prediction or perceived norms and how this impulse might affect other types of research and/or be countered by good research design.

Strategic Thinkers will develop final projects that are well organized, demonstrating that they understand both the subject area rules and the rules of a product proposal. They'll be relatively efficient in their approach and integrate all phases of the task (problem formulation, research, and interpretation) into their final work product.