edutopia *presents*

TOP TEN TIPS FOR ASSESSING PROJECT-BASED LEARNING

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PLUS, A BONUS TIP
on
HOW TO ASSEMBLE A PBL TOOL KIT

Top Ten Tips

for Assessing Project-Based Learning

RECENTLY, I WATCHED A TEAM OF NINTH GRADERS present their vision for a city of the future. They had clearly done their research, investigating everything from the politics of ancient Athens to the principles of sustainable design in the 21st century. Then they applied what they learned to design a 3-D model of their ideal city. As their classmates and teachers gathered around the scale model, the young urban designers pointed out the innovative features of their metropolis. I couldn't help but notice their passion, eloquence, and creativity—none of which would have been adequately assessed by a multiple-choice test.

If we hope to offer students real-world learning experiences like this one, we need to be ready with a tool kit of authentic assessment strategies to guide the teaching and learning process. This classroom guide is intended to inspire and expand your thinking about effective assessment in project-based learning.

The tips listed below are organized to follow the arc of a project. First comes planning, then the launch into active learning, and then a culminating presentation. Reflection is the final stage, and it's equally important for students and teachers. At each stage, paying attention to assessment will pay dividends.

We start with **tip #1: Keep It Real with Authentic Products.** These suggestions help you imagine final products that will offer students better ways to demonstrate what they have learned. Follow the links to videos, online discussions, digital tools, and other resources from educators who have wisdom to share.

Assessment doesn't just happen at the end of a project, of course. That's why we offer tips, tools, and strategies to help with formative assessment. For example, **tip #5, Gather Feedback—Fast,** offers ideas for quick check-ins at the start and end of the day to help keep learning on track during an extended project.

At the national level, conversations about school reform are increasingly focused on assessment. Secretary of Education Arne Duncan has called for educators to rethink standardized assessment so that it goes beyond narrowly focused bubble tests, and new projects are in the pipeline to build a better system for gauging what students know and can do. **Tip #3, Learn from Big Thinkers,** offers insights from education experts to help you stay up-to-date about the latest thinking on school reform.

Many suggestions in this guide come from creative educators in the Edutopia community who are devising their own good strategies for comprehensive assessment. We invite you to join the conversation by taking part in online discussions. (Get started at **http://www.edutopia.org/pblgroup.)** What are your favorite tools and strategies for effective assessment? What do you do to help students keep projects on track so that they can take learning to new heights? Please share your ideas so we can continue learning together.

—Suzie Boss
Edutopia blogger and coauthor of
Reinventing Project-Based Learning

TIP LIST

PLAN AHEAD

1. **Keep It Real with Authentic Products**
2. **Don't Overlook Soft Skills**
3. **Learn from Big Thinkers**

LAUNCH INTO LEARNING

4. **Use Formative Strategies to Keep Projects on Track**
5. **Gather Feedback—Fast**
6. **Focus on Teamwork**
7. **Track Progress with Digital Tools**

SHARE WHAT STUDENTS KNOW

8. **Grow Your Audience**

REFLECT, REVISE, REVISIT

9. **Do-It-Yourself Professional Development**
10. **Assess Better Together**

+ BONUS TIP:
How to Assemble Your PBL Tool Kit

TIP #1

PLAN AHEAD

Keep It Real with Authentic Products

IN PROJECT-BASED LEARNING, students don't just memorize facts and recall information; they learn more deeply by doing—or that's the goal at least. To set the stage for success, invest in planning before you bring students into the project. The planning stage is when you establish learning goals about the content and skills you want students to master. It's also the time to focus on assessment strategies that will guide teaching and learning throughout the project. If you've relied on traditional tests for assessment in the past, now's your chance to think outside the (check) box to find more-authentic ways for students to demonstrate what they know and are able to do.

Over the course of a project, students might take on the roles of scientists, historians, screenwriters, or experts from other disciplines. Look to these disciplines for appropriate end-of-project assessment ideas. What sorts of products would you expect from a biologist, poet, or social scientist? What do professionals from these fields make, do, or perform? Expect similar products or performances from your students at the culmination of a project to show what they have learned. Authentic products naturally reflect the learning goals and content standards you have identified during project planning. They don't feel fake or forced. The Coalition of Essential Schools, a proponent of performance-based assessment, suggests a wide range of final products to jump-start your thinking: **http://www.essentialschools.org/resources/115.**

In his article "The Power of Audience," Steven Levy describes the genuine products created by Expeditionary Learning students in schools across the country. For example, students in Maine created an activity book about oceans to interest and entertain young diners at a waterfront restaurant. Compelling research presentations by students in Rochester, New York, convinced the city council to invest in a feasibility study about restoring a historic waterway. Download the article, originally published in *Educational Leadership*: **http://elschools.org/best-practices/power-audience-steven-levy.**

Sharing their final products with an audience brings students valuable feedback and an opportunity to reflect on what they have learned. Watch the video *Anatomy of a Project: Kinetic Conundrum* from Edutopia's Schools That Work series to see a culminating event for an engaging interdisciplinary project: **http://www.edutopia.org/project-learning-kinetic-art.** (You can find more suggestions to attract audiences for your culminating events in **tip #8: Grow Your Audience.)**

Learn how authentic assessment improves results and keeps students engaged at New York City's School of the Future, which we profiled in Edutopia's Schools That Work series: **http://www.edutopia.org/stw-assessment.**

Related Resources:

- Get practical ideas from School of the Future in "Ten Takeaway Tips for Using Authentic Assessment in Your School": **http://www.edutopia.org/10-assessment-tips-for-class.**
- Join Edutopia's Assessment group and share ideas with colleagues across the country—and beyond: **http://www.edutopia.org/groups/assessment.**
- Review an overview of assessment from NYLearns.org: **http://www.nylearns.org/module/assessment/pages/basics/.**
- Learn NC, a program of the University of North Carolina at Chapel Hill, offers online resources to inform assessment practices: **http://www.learnnc.org/lp/pages/645.**

TIP #2

PLAN AHEAD

Don't Overlook Soft Skills

WITH THE COMMON CORE STATE STANDARDS (http://www.corestandards.org) gaining widespread adoption, there's increasing national focus on getting students ready for college and careers. But future readiness involves more than mastering rigorous content. Students also need help developing the so-called soft skills, such as critical thinking, global awareness, and being able to solve problems creatively. Projects that deliberately emphasize—and assess—these skills help students prepare for the complex challenges ahead.

For some good thinking about thinking, visit the Critical Thinking Compendium **(http://critical-thinking.iste.wikispaces.net),** an online resource developed by Howard Rheingold and other big thinkers in education. Microsoft has published a free e-book to promote critical thinking when it comes to Web researching: **http://www.microsoft.com/education/teachers/guides/critical_thinking.aspx.** For practical ideas about how classroom questions can promote deeper discussions, watch the multimedia show on higher-order questions and find classroom examples on the Doing What Works site: **http://dww.ed.gov/practice/?T_ID=19&P_ID=43.**

What is your school doing to prepare students for careers and college? "The MILE Guide: Milestones for Improving Learning & Education," a self-assessment tool developed by the Partnership for 21st Century Skills, can help your school community have a more informed conversation about this topic. Download the guide at **http://p21.org/documents/MILE_Guide_091101.pdf.**

Antioch University New England's Antioch Center for School Renewal offers a host of classroom tools to promote critical thinking as part of its Critical Skills Program: **http://www.antiochne.edu/acsr/teachertools/.**

Coventry High School, in Coventry, Rhode Island, has been a front-runner in preparing students for life after high school. Students produce a portfolio of work samples and tackle a capstone project en route to graduation. This handbook describes the expectations for teachers, students, and parents: **http://faculty.coventryschools.net/MarsellaAnthony/docs/Student_Handbook-Final_Edit_03-12-08.pdf.**

Related Resources:

- "Are They Really Ready to Work?" is an influential report about workforce readiness from the Conference Board, Corporate Voices for Working Families, Partnership for 21st Century Skills, and the Society for Human Resource Management. Download a copy at **http://www.p21.org/documents/FINAL_REPORT_PDF09-29-06.pdf.**
- The Edutopia article "Digital Portfolios Pull Double Duty" shares tools and strategies to help students document and reflect on their learning: **http://www.edutopia.org/digital-portfolio-assessment.**

TIP #3

PLAN AHEAD

Learn from Big Thinkers

ASSESSMENT CONTINUES TO BE A HOT TOPIC in education with ongoing debates about everything from high-stakes testing to international comparisons of student achievement. Make sense of the assessment issues by learning from some of the big thinkers in the field.

What do teaching, learning, and assessment look like in high-achieving countries? Stanford University professor Linda Darling-Hammond discusses international trends in this Edutopia video interview: **http://www.edutopia.org/assessment-linda-darling-hammond.** She shares more insights on what's happening internationally in her recorded Edutopia webinar, "Lessons from Abroad: International Standards and Assessments": **http://www.edutopia.org/webinar-november.**

Professor Yong Zhao, author of *Catching Up or Leading the Way: American Education in the Age of Globalization,* makes the case for relevant, personal education that encourages creative thinking instead of focusing on standardized testing to prepare American youth for the future. Learn more in this video: **http://nycpublicschoolparents.blogspot.com/2010/09/yong-zhao-on-how-our-global.html.**

Grant Wiggins, co-creator of *Understanding by Design* and president of Authentic Education **(http://www.authenticeducation.org),** explains how to use assessment to advance learning in his Edutopia article, "Healthier Testing Made Easy: The Idea of Authentic Assessment": **http://www.edutopia.org/authentic-assessment-grant-wiggins.**

Heidi Hayes Jacobs, curriculum-design expert and editor of the book *Curriculum 21: Essential Education for a Changing World,* suggests that revising how teachers think about assessment is a realistic step toward overhauling teaching and learning for the 21st century. She shares more ideas in this video interview, "ASCD Talks with an Author": **http://www.ascd.org/Publications/Books/ASCD-Talks-With-an-Author/ASCD-Talks-With-an-Author-%28main%29.aspx.**

Related Resources:

- School leaders from New York City's School of the Future share how they implemented and support authentic assessment in this Edutopia Q&A: **http://www.edutopia.org/assessment-administrator-tips.**
- Hear professor James Paul Gee talk about using digital games for grading in this Edutopia video: **http://www.edutopia.org/james-gee-classroom-simulations.**
- Start an online book group about assessment using the reading list from Expeditionary Learning: **http://elschools.org/educator-resources/recommended-reading#assessment.**
- Create a virtual bookshelf with tools like Shelfari (**http://www.shelfari.com**), LibraryThing (**http://www.librarything.com**), or Goodreads (**http://www.goodreads.com**). BookGlutton (**http://www.bookglutton.com**) is a social network for discussing e-books.

TIP #4

LAUNCH INTO LEARNING

Use Formative Strategies to Keep Projects on Track

MORE THAN A DECADE AGO, researchers Paul Black and Dylan Wiliam compared classroom learning to a black box. How can we know what transpires within this mysterious space, they pondered in a now-famous essay, if we can't peer into the minds of learners and see what's happening? They concluded that formative assessment offers the best method to inform and improve instruction. Formative assessment helps you gather information about learning while it's happening through strategies such as questioning, observation, quizzes, and other check-ins on understanding.

Although Black and Wiliam weren't focused on project-based learning, their advice is useful in a PBL setting in which students are likely to be working on different tasks at different times. Formative assessment keeps projects on track while ensuring that diverse learners master important content. Instead of delivering lectures to the whole class, for instance, you can use mini-lessons to address a concept or skill that some students are struggling to understand. You can also use mini-lessons to introduce a new technology to a group of students, who can then teach their teammates how to use the tool.

What does formative assessment look like in PBL practice? Some of the best examples come from teachers who use blogs and online communities to reflect on their practice. For example, veteran teacher Kevin Hodgson offers a window into his classroom with Digital Is, an online community from the National Writing Project. In his write-up about creating digital books, he explains, "As the teacher, I am often 'making the rounds' of the room, doing more mini-lessons than lectures, and acting as a sort of guide to the technology even as I help them with the traditional elements of story writing. The project is one way to integrate the concept of 'student as composer' with digital tools while still remaining anchored in some of the teaching that goes on in many classrooms." Hodgson shares more insights, including tools he uses for assessing writing, at his site: **http://digitalis.nwp.org/resource/610.**

In an Edutopia blog post, "Assessment Carnival: More Than Quizzes and Tests" **(http://www.edutopia.org/blog/forms-of-assessment),** teacher and author Shawn Cornally describes his evolving thinking about assessment. He's been on a quest to rethink assessment as a tool "to create learning, instead of just to judge it." He offers a short reading list of influential edubloggers such as Dan Meyer, who shared some of his math-classroom strategies in an earlier post, "Teaching with Visuals: Students Respond to Images" **(http://www.edutopia.org/visuals-math-curriculum).**

Related Resources:

- Digital Is, an online community from the National Writing Project, offers resources to make teaching and learning more visible. For example, it offers a section called Window into Classrooms: **http://digitalis.nwp.org/collection/windows-classrooms-growing-digital-colle.**
- Revisit the Black and Wiliam essay, "Inside the Black Box": **http://weaeducation.typepad.co.uk/files/blackbox-1.pdf.**
- The National Educational Technology Plan has a section on assessment, which includes a discussion of promising tech tools: **http://www.ed.gov/technology/netp-2010/assessment-measure-what-matters.**
- Edutopia's Schools That Work series on authentic assessment has a useful video on how to use sticky notes to break down complex concepts into manageable pieces and help students master challenging assignments: **http://www.edutopia.org/stw-assessment-authentic-reading-skills-teacher-video.**

TIP #5

LAUNCH INTO LEARNING

Gather Feedback—Fast

PROVIDING STUDENTS WITH JUST-IN-TIME FEEDBACK during a project is key to helping them succeed. Keep things fresh by using a mix of strategies to gather feedback and then share insights with students right away.

Turn the first five minutes of class into prime learning time by using "bell ringer" activities to check in on student understanding. These quick warm-ups require little or no explanation; students do them as soon as they arrive in class. Bonny Bowen, a middle school social studies teacher from Plainwell, Michigan, explains how she connects bell ringers to big ideas in a narrated slideshow on the Doing What Works website **(http://dww.ed.gov/media/CL/OIS/SL/See/flashlite/549/index.htm).** Bowen says her goal is to "get more kids every day to be closer to the real meaning of whatever concept we're working on." She sees a boost in student confidence from quick activities that help students realize where they need to be. She also quickly finds out who's struggling or behind, and she can step in with extra support.

At the other end of the day, try the "ticket out the door," or exit-card method, to encourage students to reflect on their learning. Mix up the questions to avoid rote answers. One day, you might use an exit card to check on team progress. On another, you might ask a content question to find out if anyone's struggling with key concepts. Students' answers will tee up the topics for your next mini-lessons. Learn more about exit cards from the online resources from the King George County Schools: **http://www.kgcs.k12.va.us/kges/Vocabulary%20pdf/Exit%20Card%20strategy.pdf.**

Tasks on demand are quick, in-class assessments given without warning or scaffolding. At New York City's School of the Future, teachers use TODs to find out if students can apply what they're learning. Learn more about TODs and other feedback strategies in "Ten Takeaway Tips for Using Authentic Assessment in Your School": **http://www.edutopia.org/10-assessment-tips-for-class.**

In a blog post on the Cooperative Catalyst site, veteran educator Peter Skillen kicks off a discussion about the role of journal writing. Does it lead to deeper understanding and more elaborate expression of ideas, or does it simply become rote? Read "Journal Writing—Just Another 'Worksheet'?" and then join the conversation about it: **http://coopcatalyst.wordpress.com/2011/01/16/journal-writing-just-another-worksheet/.**

Related Resources:

- Doing What Works is a website from the U.S. Department of Education that translates research-based ideas into practical insights to improve instruction. It includes videos, multimedia content, and more resources on a wide range of topics: **http://dww.ed.gov/.**
- To capture learning while it's happening, try using Web 2.0 tools like Evernote (**www.evernote.com**) or a Flip camera to document important moments. Peter Richardson shares his strategies for using Evernote to gather evidence of learning in this blog post on Primarypete.net: **http://primarypete.net/evernoteforevidence.** Richard Byrne shares ideas for using Flip cams in class in a blog post on Free Technology for Teachers: **http://www.freetech4teachers.com/2010/03/many-ways-to-use-flip-cameras-in.html.**

TIP #9

LAUNCH INTO LEARNING

Focus on Teamwork

TEAMWORK IS STANDARD PRACTICE in project-based learning, but that doesn't mean students automatically know how to work well together. Help students make the most of team opportunities by deliberately teaching (and modeling) collaboration strategies. Project calendars help team members keep track of shared deadlines. Reflection activities encourage students to think about how teams are working together—or raise red flags if they need help getting back on track.

Encourage better collaboration by having students draw up a team contract to describe members' responsibilities to the group. West Virginia, which has embraced project-based learning as part of its Teach 21 learning initiative, shares samples of team contracts and other project-management tools: **http://wvde.state.wv.us/teach21/PBLTools.html.**

The Critical Skills Program at Antioch University New England has developed strategies to foster more-effective collaboration in the classroom. For instance, as a reflection activity, you might ask students to think about how they are interacting on their teams (are you being more of a leader or more of a follower?), or to rate the quality of collaboration (are you listening to everyone's ideas and do team members feel valued?). Downloads include collaboration tools geared for elementary school, middle school, and high school levels **(http://www.antiochne.edu/acsr/teachertools/).**

iEARN, the International Education and Resource Network, encourages global collaboration among students and teachers from more than 125 countries. Project topics vary widely, but they all attempt to answer the big question: How will this project improve the quality of life on the planet? To learn more and see descriptions of collaborative projects you might want to join, visit the iEARN Collaboration Centre: **http://collaborate.iearn.org/spaces.**

Related Resources:

- When it comes to managing team projects, some of the best advice comes from PBL veterans. The Buck Institute for Education has gathered nuggets of wisdom from practitioners about managing and assessing projects: **http://www.bie.org/research/study/principles_from_the_field/.**
- Want to see a power team in action? Watch this Edutopia video about a team of West Hawaii Explorations Academy students building—and racing—an electric car: **http://www.edutopia.org/assess-student-teamwork-skills.**

TIP #7

LAUNCH INTO LEARNING

Track Progress with Digital Tools

OBSERVATION AND QUESTIONING ARE FAMILIAR strategies for assessment, but digital devices can help you track student progress in different ways. Vary your assessment methods through the use of mobile devices and podcasting, and you'll gather even more information to inform instruction.

In the Information Age, literacy has taken on an expanded definition. Today's students are challenged to navigate and analyze an ever-expanding store of digital information. Yet teachers also need to pay attention to basic literacy skills, such as being able to read fluently and with comprehension. Using iPods and other digital devices to assess reading progress is one strategy to help diverse learners become more confident readers and producers of information.

What might this kind of assessment look (and sound) like? A learning community of teachers in California's Escondido Union School District created iREAD (I Record Educational Audio Digitally), a program that serves many English-language learners. Since 2006, educators there have been pioneering the use of iPods and other digital tools to improve reading fluency. They started by having elementary students record their practice reading using iPods. Struggling readers could listen to and analyze their own efforts, with none of the potential embarrassment of reading aloud. Teachers could review the podcasts at any time, creating more opportunities for reading assessment. Milton Chen, senior fellow of The George Lucas Educational Foundation and author of *Education Nation,* describes the project in his post "iPod, iListen, iRead": **http://www.edutopia.org/blog/ipod-improves-reading-skills.**

The iREAD group continues to grow organically, with a wiki and other social-media tools that enable educators to exchange ideas and share best practices. Project ideas have also expanded, with teachers and students now involved in creating a variety of digital media to build literacy. Check out the wiki to find ideas you might want to adapt for your students: **https://sites.google.com/a/eusd.org/eusd-iread/home.**

Another group has adapted the learning-on-the-go concept to meet the needs of students with special needs. To learn more, visit Mobile Learning 4 Special Needs **(http://mobilelearning4specialneeds.wikispaces.com/)** or watch the site's video case studies about how students benefit from anywhere, anytime assessment: **http://mobilelearning4specialneeds.wikispaces.com/Video+Case+Studies.**

Related Resources:

- VoiceThread, a Web 2.0 tool for making shareable digital media albums, can be handy for capturing the voices of young readers. Find more ideas and connect with willing collaborators to comment on your students' read-alouds at the VoiceThread 4 Education wiki: **http://voicethread4education.wikispaces.com/.**
- In a blog post on the Teach Science and Math site, David Wetzel explains how to integrate podcasting into math and science classes: **http://www.teachscienceandmath.com/2010/04/30/how-to-integrate-podcasting-into-science-and-math-classes/.**
- To give quieter students more of a voice in group discussions, try opening a private chat room just for your classroom. Use an instant-messaging tool like iChat or Google Talk, or use Twitter (**http://twitter.com**) to open a back channel during class. The archived chat will help you learn more about what students are thinking.
- The Reading and Writing Project, housed at Teachers College at Columbia University, offers resources for professional development to promote literacy: **http://tc.readingandwritingproject.com/resources/assessments.**

TIP #8

SHARE WHAT STUDENTS KNOW

Grow Your Audience

PROVIDING STUDENTS with an audience for their work inspires motivation in project-based learning. The right audience can even take learning deeper. When students present their work publicly, they find out what it's like to respond to challenging questions and to receive constructive criticism. Grow your audience to include family members, content experts, other community members, and even online participants who can add more value to the experience.

Amy Hollinger, facilitator and administrator at a project-based school, says her students seek out expert feedback at various stages of a project. She explains: "On the front end of the project, students contact experts for support in building background knowledge or to help design the project." After students have completed their initial research, they send a draft version of their project to "experts in the field of whatever topic they're working on," notes Hollinger. Expert feedback informs the next stage of student work. "This is the step most students like the most," Hollinger says. To see more of Hollinger's practical comments about project assessment, join the conversation in Edutopia's PBL group: **http://www.edutopia.org/groups/project-based-learning/36144.**

Social-media tools offer another way to grow your audience for student projects. If your students are sharing their work publicly—on blogs, for example—and would benefit from outside comments, put out the word on Twitter. That's how Christian Long built buzz for the ambitious TEDxClassroomProject, in which tenth graders reviewed and responded to more than 640 TED Talks **(http://tedxproject.wordpress.com).** Noted participants from the TED conference wound up commenting on the students' posts, and a few even connected for live discussions with students via Skype **(http://www.skype.com).**

To see what happens en route to a project exhibition, watch Edutopia's *Project Learning: Expeditions in Portland, Maine:* **http://www.edutopia.org/project-learning-expedition.** Related resources in the Schools That Work package include a downloadable guide that describes how to engage with experts, along with other practical steps in project planning. Go to **http://www.edutopia.org/project-learning-resources-6-12** and download the PDF titled "King Middle School Six Steps to Planning a Successful Project."

Related Resources:

- Student exhibitions are a big part of learning at Envision Schools, a network of project-based high schools in California. Project Exchange, an online project showcase from the network, features a video documentary called *The Power of Student Exhibitions:* **http://www.envisionprojects.org.**
- It's important for audience members to know what you're asking of them during a showcase event. The Buck Institute for Education provides an audience feedback form, along with other downloadable tools and resources, as part of a self-guided tutorial called "PBL Do-It-Yourself" (free registration required): **http://www.bie.org/diy/getting_started/what_is_pbl.**
- What do learning exhibitions look like in the elementary grades? The Coalition of Essential Schools offers some helpful guidance: **http://www.essentialschools.org/resources/343.**

TIP #9

REFLECT, REVISE, REVISIT

DIY Professional Development

EXPANDING YOUR ASSESSMENT STRATEGIES takes time and practice. Fortunately, there's no shortage of online resources to assist you with do-it-yourself professional development.

High Tech High, a network of project-based K-12 charter schools that began in San Diego, emphasizes learning for adults along with students. High Tech High offers free online professional-development opportunities for educators interested in improving their practice. For instance, High Tech High offers collegial conversations that focus on a different topic each month, such as using project exemplars to encourage high-quality student work. For a list of upcoming topics or to watch recordings of past events, go to **http://gse.hightechhigh.org/collegial_conversations.php.** To learn more about High Tech High, watch Edutopia's videos on the schools: **http://www.edutopia.org/projects-portfolio-assessments.**

The Buck Institute for Education unveiled "PBL Do-It-Yourself" **(http://www.bie.org/diy),** a self-paced, multimedia tutorial to help you with all phases of project planning and implementation, including assessment. In addition to the video clips and online information to guide your thinking, you'll find a number of useful project tools to download. If you want feedback on a project you're developing, there's a place to submit your plan and request a review from the BIE team.

Expectations for 21st-century learners have expanded in recent years, but classroom practices haven't necessarily kept pace. Assessment in 21st-Century Classrooms is a short, free e-learning course from Intel that's designed to help teachers shift from traditional tests and quizzes to newer assessment approaches. Work through the course at your own pace and use your learning time to develop or remodel a project for your classroom: **http://www.intel.com/education/video/assess/content.htm.**

Related Resources:

- In response to an invitation from Edutopia blogger Mary Beth Hertz, teachers submitted lesson plans that effectively integrate technology. Take a look at the ideas that members of the Edutopia community shared: **http://www.edutopia.org/blog/seven-tech-integration-lesson-plans.**
- Project libraries can be a gold mine for sparking your own project ideas or refining a particular aspect of project planning. For a look at global collaboration projects, visit iEARN's Collaboration Centre (**http://collaborate.iearn.org/**) or the Flat Classroom Project (**http://www.flatclassroomproject.org/**).

TIP #10

REFLECT, REVISE, REVISIT

Assess Better Together

TEAM UP WITH COLLEAGUES to dig into the nitty-gritty of assessment. Discussing and deepening your understanding of assessment practices can be a rich professional-development activity, helping you build common language and strategies to encourage high-quality student work.

The Academy for Educational Development **(http://scs.aed.org/rsw/)** has developed online resources, including discussion guides, to guide professional conversations about student work. There's even a transcript of teachers talking about a student writing sample. Examining student work together as professional practice is also the idea behind Looking at Student Work **(http://www.lasw.org/).** The Coalition of Essential Schools offers more tools for looking collaboratively at student work: **http://www.essentialschools.org/resources/60.**

If you know what students are thinking, you can fine-tune your instruction to meet their learning needs. But how do you gain that insight during fast-paced projects? Visible Thinking, a research-based project of Harvard's Project Zero, describes a set of simple but powerful thinking strategies that teachers can implement in the classroom with minimal preparation. Get comfortable using the routines by practicing with colleagues and then bring them into your classroom to take student thinking deeper during projects: **http://www.pz.gse.harvard.edu/visible_thinking.php.**

Teachers at the Calgary Science School, an inquiry-based school in Alberta, Canada, have been focusing their attention on assessment. As they explain in a post on Connect **(http://calgaryscienceschool.blogspot.com),** the school's professional-learning journal, three big questions have helped frame discussions: What do report cards tell parents? How do we collect data in an effective way that best represents the understanding of students? How do rubrics and exemplars help teachers and students communicate the language of assessment in a classroom context? Use these questions to guide your own collegial conversation about assessment.

Another strategy for finding out what students understand is to conduct a clinical interview. In an article for LEARN NC, David Walbert describes how this process has been used in a problem-based math workshop: **http://www.learnnc.org/lp/editions/pcmath/1252.**

Related Resources:

- The National Library of Virtual Manipulatives offers online tools students can use to visualize relationships and applications involved in problem-solving strategies: **http://nlvm.usu.edu/en/nav/vlibrary.html.**
- Kate Garrison discusses common myths about assessment in a podcast with the National Middle School Association: **http://www.amle.org/ServicesEvents/Multimedia/AMLEPodcasts/TabId/255/ArtMID/775/ArticleID/242/CategoryID/63/Formative-Assessment-Debunking-Myths.aspx.**
- "Take a Deeper Look at Assessment for Understanding," an article that first appeared in Edutopia over a decade ago, continues to spark conversation. Use the article to jump-start discussions with your colleagues or join the online discussion: **http://www.edutopia.org/performance-assessment-math.**

BONUS TIP

How to Assemble Your PBL Tool Kit

TEACHERS WHO ARE VETERANS at project-based learning have a tool kit of resources they can modify and reuse from one project to the next. If you're new to PBL, spend some time in the planning stage getting your project tool kit started. Tap into networks of PBL teachers who have good tools to share.

RubiStar **(http://rubistar.4teachers.org),** an online rubric generator, is a perennial favorite for creating project scoring guides. Rubrics define the criteria for quality work, giving students an understanding of how their work will be evaluated. Some teachers involve their students in developing scoring guides, encouraging self-assessment from the start. If you work with young learners, you might translate a rubric into kid-friendly language. RubiStar allows you to make, edit, and save your own project rubrics with a free account. Or you can build on the work of colleagues by adapting their scoring guides for your projects. If you're looking for project ideas, check out the inspiration page where teachers describe their projects in detail and also offer field-tested tips.

Checklists and project logs can be useful for quick check-ins about student progress. Such tools don't assess the quality of student work, but they do remind students about milestones and deadlines. Project logs can also help teams manage their collaborative effort by tracking who's responsible for what—and when. Get project checklists ready in advance at the PBL Project Checklists website: **http://pblchecklist.4teachers.org.**

If you're new to project-based learning, it can help to see how PBL veterans define what goes into a successful project. To see samples of completed rubrics that focus on critical thinking, collaboration, and other 21st-century skills, visit the FreeBIEs section of the Buck Institute for Education website (free registration required): **http://www.bie.org/tools/freebies.**

Related Resources:

- Find more discussions about assessing projects in the Classroom 2.0 social-networking group PBL—Better with Practice: **http://www.classroom20.com/group/pblbetterwithpractice.**
- LiveBinders is a free tool for creating, organizing, and sharing project materials and artifacts: **http://livebinders.com.**
- During a project, students are likely to be at different stages of understanding. This means teachers may need to work in new ways. When biology teacher Louise Maine shifted to more student-centered teaching, she found a wiki to be invaluable as a collaborative learning space. She explains her classroom evolution in the Edutopia article "Wiki Woman: How a Web Tool Saved My Career": **http://www.edutopia.org/wiki-tool-transforms-teaching.**

Top Ten Tips

for Assessing Project-Based Learning

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PLUS, A BONUS TIP ON HOW TO ASSEMBLE A PBL TOOL KIT

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