Backwards Learning

What is it?

A learning-with-the-end-in-mind technique that has students analyze culminating assessment tasks *before* instruction begins to identify the knowledge and skills they'll need to complete those tasks successfully

What are the benefits of using this tool?

Thanks to Grant Wiggins and Jay McTighe's *Understanding by Design* (2005), many educators are familiar with backward design, or the process of designing instruction with learning outcomes and assessments in mind. But thinking backwards is hardly the exclusive domain of lesson designers. In fact, thinking backwards is what gives our most successful students their self-direction. Successful students regularly ask themselves what assigned tasks will demand of them and what they can do to meet those demands. This tool teaches all students to do the same by giving them a step-by-step process for analyzing a task, breaking it down into *knowing* and *doing* goals, and devising a plan for success.

What are the basic steps?

1. Examine the learning goals/targets for an upcoming lesson or unit. Develop a culminating assessment task that is consistent with these goals/targets.

2. Introduce your lesson or unit, then present the assessment task to students.

3. Download copies of the Backwards Learning Organizer (www.ThoughtfulClassroom.com/Tools) or let students draw their own organizers using the ones on pp. 19–20 as models.

4. Use the organizer to walk students through the steps in the Backwards Learning process. Specifically,

- Check (and help students check) that they understand the given task by asking them to explain it in their own words. Examine students' responses and clarify or re-explain the task if needed.
- Ask students to determine what they'll need to *know and understand* in order to complete the task successfully (e.g., "I'll need to know the difference between an acid and a base").
- Ask students to determine what they'll need to *be able to do* (skills) in order to complete the task successfully (e.g., "write a comparative essay" or "create a picture graph").
- *Optional:* Help students spell out their plans for acquiring the requisite knowledge and skills. Sample action plan: "I'll consult a dictionary, Wikipedia, and my text to see what I can learn about allegory."

How is this tool used in the classroom?

✔ To have students analyze a task and determine what it will require of them
✔ To teach students to establish goals and plans for completing assigned tasks
✔ To help students become more self-directed learners

Organizers from different grade levels and content areas are shown below (additional examples are available for download at www.ThoughtfulClassroom.com/Tools). The optional "create an action plan" portion of Step 4 is illustrated in Example 1.

EXAMPLE 1: A fourth grader's analysis of the culminating assessment task for a poetry unit

What is my task?

Write about something I love using three kinds of poems.

The three kinds of poems are called haiku, limerick, and cinquain.

KNOWING GOALS
What will I need to know and understand?

What a haiku is
What a limerick is
What a cinquain is

DOING GOALS
What will I need to be able to do?

I will need to know how to write my own haiku, limerick, and cinquain. It sounds like fun!

What is my plan for completing this task successfully? What steps will I take?

I will decide what to write about. I think I am going to write about cats.

I will look at example poems to learn from them.

I will listen carefully and make some notes when we learn about the kinds of poems.

I will write some poems for practice before writing my real ones.

I will ask my friend Giada if she wants to work on our poems together after school.

EXAMPLE 2: A high school student's analysis of a task on renewable/nonrenewable energy

What is my task?

Write an editorial that explains the difference between renewable and nonrenewable energy and that takes a position on how to address the energy crisis.

What will I need to know?

• Differences between renewable and nonrenewable energy
• Causes and effects of the energy crisis
• Options for addressing the energy crisis and the pros/cons of each

What will I need to be able to do?

• Conduct a comparison
• Research different options for addressing the energy crisis
• Write a persuasive editorial

EXAMPLE 3: A middle school student's analysis of a physical-chemistry design task

> **At the end of this unit, I'll be asked to…**
> *Design a container that has the least amount of heat loss.*
>
> | **Here's what I'll need to know:** | **Here's what I'll need to be able to do:** |
> |---|---|
> | · *How heat moves*
 · *What materials slow down heat loss*
 · *What factors affect heat loss*
 · *If the material in the container is a solid or a liquid* | · *Design containers*
 · *Measure temperature*
 · *Calculate heat loss*
 · *Compare heat loss of different designs* |

EXAMPLE 4: An organizer that first-grade students completed as a class with some help from their teacher (note that the task was designed to target Common Core Standard RL.1.5)

> **What is my task?**
> Make a poster that could teach someone the differences between books that tell stories and books that give information. The poster should show examples of both kinds of books.
>
> | **What do I need to know?** | **What do I need to be able to do?** |
> |---|---|
> | • I need to know what a book that tells a story is.
 • I need to know what an information book is. | • Explain the difference between books that tell stories and books that give information.
 • Find examples of both kinds of books.
 • Make a poster. |

Teacher Talk

➔ Here are some scaffolding tips:

- Before using the tool, discuss the difference between knowing goals (goals that involve acquiring and making sense of declarative knowledge) and doing goals (goals that require mastering specific skills, procedures, or behaviors). Use concrete examples to help students understand the distinction.

- Familiarize students with the kinds of questions they should ask themselves when developing their action plans (optional portion, Step 4). Then help them brainstorm some possible answers.

  Sample questions and answers: Where will I look for information? (textbook, Internet, notes); Who can help me? (librarian, teacher, friend, parent); What learning or study strategies will I try? (text previewing, Interactive Note Making, mnemonic devices)

  Note: The questions above are printed on the downloadable organizer for easy reference.

- Let students complete a Backwards Learning Organizer as a class before having them complete one on their own. *Note:* Very young students can complete the organizer as a class every time.

Student-Generated Assessment Criteria

What is it?

A tool that prepares students to produce high-quality work by showing them examples of what it looks like and helping them identify its essential attributes

What are the benefits of using this tool?

Establishing the criteria by which students' work will be evaluated has traditionally been the teacher's prerogative. Shifting some of this responsibility to students can be extremely worthwhile since students have an easier time understanding and applying assessment criteria that they themselves generate. This tool initiates such a shift by giving students samples of exemplary work and helping them identify the elements that define quality. Under the guidance of their teacher, they then convert these "quality elements" into a list of assessment criteria that helps them focus, evaluate, and improve their work on an upcoming task.

What are the basic steps?

1. Present an assessment task that requires students to create a product or performance.

2. Help students identify the characteristics of high-quality work *before* they tackle the assigned task. To do this, choose and use one of the following approaches (divide students into three- to five-member teams before they begin working):

- *High-Performance Approach:* Select or create three different samples of exemplary work. Help students compare the samples and identify the common characteristics. (What are the essential attributes of high-quality work?)

- *Three-Level Approach:* Select or create samples of excellent, average, and below-average work. Help students compare the samples and identify the critical elements that distinguish one level of quality from the next.

3. Invite students to discuss their findings as a class. Help them refine, synthesize, and transform their ideas into a list of mutually acceptable assessment criteria for the assigned task. Ensure that the final list includes all the critical dimensions of a quality product/performance.

4. Explain that *students* should use this list of criteria to guide, assess, and improve their work on the assigned task. Then explain how *you* will use the list to evaluate their completed assignments.

5. Make it clear that this strategy of analyzing and learning from high-quality work is one that students can and should use independently—not just when you tell them to.

How is this tool used in the classroom?

✔ To help students identify and internalize the characteristics of high-quality work

✔ To involve students in defining the criteria by which their work will be evaluated

✔ To give students criteria for guiding, assessing, and improving their work

HIGH-PERFORMANCE APPROACH: "What does good work look like?"

To help his students identify the characteristics of a top-notch narrative (working toward Common Core Standard W.2.3), a second-grade teacher read them three high-quality examples from his previous year's class and asked them to think about what the examples had in common. He recorded their thoughts on the board, helped them refine their list of ideas, and printed up copies for them to keep. The next day, students used the list of criteria they had generated (below) to help them write their own narratives. Before submitting their drafts, students worked with a writing buddy to check that they had met all the criteria and to revise their work as needed (Common Core W.2.5).

What do we notice at the BEGINNING?

The first sentence is interesting and makes you want to read more.

The first sentence tells you what event or experience the writer is going to be writing about.

Example: "I bet you would never guess what happened to me on the playground."

What do we notice in the MIDDLE?

The writer uses "order words" to help you understand the order in which things happened.

Examples: first, next, after that, finally

The writer describes actions, thoughts, and feelings. The writer uses strong verbs and adjectives to help you picture what's happening.

Examples: "I rode my shiny yellow bike." "She yelled in a loud voice." "I felt sad like I was going to cry."

Note: This same list of criteria was used to provide students with specific feedback about their completed drafts during teacher/student writing conferences.

THREE-LEVEL APPROACH: "What's the difference?"

After comparing excellent, average, and below-average argument essays from a previous year's class, a group of seventh graders identified the characteristics that distinguished one level of quality from the next. They then used this information to create the rubric below. After confirming that their "criteria for excellence" were consistent with the Common Core Writing Standards (W.7.1), their teacher encouraged them to use this rubric throughout the year to help craft the kinds of coherent and logically argued pieces that the standards call for.

	EXCELLENT SAMPLES	AVERAGE SAMPLES	BELOW-AVERAGE SAMPLES
POSITION	Writer's position is clearly stated and easy to find.	Writer's position is a little bit hard to follow or hard to find.	Writer doesn't take a position or position isn't clearly explained.
EVIDENCE	Position is supported with logical and relevant evidence.	Needs more (or more convincing) evidence to support the position.	Evidence is missing, unconvincing, or irrelevant.
ORGANIZATION	Reasons/evidence are presented in a logical order.	Reasons/evidence would make better sense in a different order.	Components (position, evidence, conclusion) are absent/out of order.

🗣 Teacher Talk

➜ The samples of work that you give students to analyze in Step 2 can be created by you, by experts, or by other students. (To help students understand the characteristics of a top-notch story, for example, you could write three of your own, grab three from a library, or select three good examples from a previous year's class.) To protect students' privacy, use samples of work from previous years' classes or other class periods—and remove students' names/other identifying information before distributing copies of their work (ask for permission as well).

Tip: If you spend this year filling a notebook or folder with samples of work at different levels of quality, you'll have an extensive collection of samples to draw on in subsequent years.

➜ With the Three-Level Approach, students are typically told which sample of work represents which level of performance. To make the task more challenging, give students the responsibility of figuring out which sample of work is which; then have them explain their reasoning.

➜ Teachers who use the High-Performance Approach often have students describe the *differences* between the three samples as well as the similarities. Why? Because calling students' attention to these differences is a good way to teach them that there's more than one "right way" to complete a given assignment.

➜ Having students examine samples of high-quality work *after* they've completed an assignment can be useful as well. A teacher we know scans students' graded tests, selects three high-quality responses for each test question, and distributes copies of those responses to students along with their graded tests. Her goal is twofold: to show students what high-quality responses look like and to teach them that there are multiple ways to answer a question well.

➜ Be sure to guide students through the criteria-generating process. The goal is to *help* them identify the criteria that define quality—not to leave the criteria-generating process entirely in their hands.

Note: Without this kind of guidance, students can easily come to the wrong conclusions about the critical attributes of a top-notch performance. They might, for example, mistakenly conclude that having decorative borders on slides is important simply because the slides in three high-quality presentations all have decorative borders. (In this case, it would be important to help students understand that decorative borders aren't in any way linked to quality; one way to do this would be to show them examples of top-notch slides that *don't* have decorative borders.)