



How to Identify and Develop Practice Briefs

About This Tool

Purpose: To provide a “how to” document for identifying and authoring practice briefs that can be used to support practitioners and researchers in their educational improvement activities.

Audience: Members of a partnership responsible for authoring and/or editing resource collections related to the work.

When to Use: When a partnership is developing insights and approaches that are ready to be more broadly shared with educational practitioners.

What Is a Practice Brief?

A “practice brief” is a short document designed to support educators with research-based information as they improve their practice and work to give all students access to meaningful learning experiences.

With that goal in mind, each brief should:

- Integrate a focus on equity throughout each tool
- Focus on a specific, broadly felt problem of educational practice
- Gather the best knowledge from both research and practice to help readers more fully understand each issue
- Highlight what people in different roles can do to address this problem of practice, providing context, actionable advice, strategies, and tools, all of which should connect to educators’ everyday work
- Suggest ways to take action with respect to the problem of practice by linking off to other tools, articles, websites, and resources
- Prompt further reflection and support discussion among colleagues

Who Uses Practice Briefs?

Practice briefs are designed to meet a variety of needs in education. While several of their uses are detailed below, we also encourage users to employ them creatively in ways that fit their goals and context.

- Individuals can use briefs to reflect on and refine their practice. Briefs can help educators align their teaching with the latest knowledge from both research and practice and make their instruction more equitable.
- Professional development sessions, professional learning communities, and project meetings can use practice briefs to spark conversation and brainstorm about a particular topic or to focus discussion and promote a shared understanding.

- School, district, informal, or state education leaders can use practice briefs to orient themselves to particular issues or problems of practice and consider ways to support their teachers. Practice brief authors may want to include a section in each tool specifically aimed at school and district leadership, offering insights into how district-level staff and PD providers might help support implementation of the suggestions in each brief.
- Pre-service teachers and educational researchers can use practice briefs to better understand the challenges educators regularly face, making them more aware of problems of educational practice and introducing possible approaches and tools.
- Organizations can offer practice briefs as small “nuggets” of helpful suggestions for their members, embedding them into email newsletters, websites, or social media outreach.

Practice brief creators should also consider authoring practice briefs aimed specifically at particular parts of the educational ecosystem, like informal educators or assessment designers. Consider bundling or tagging your tools to help users find related resources. For example, [STEM Teaching Tools](#) include tags like “Assessment” and “Informal Education” to help users locate the information most relevant to them.

Part 1: How to Launch a Brief Development Initiative

Step 1: Learn About Why a Brief Development Initiative is a Useful Partnership Activity

Research-practice partnerships investigate and work on problems of practice that impact teaching and learning in educational settings. These partnerships can develop useful insights and tools based on close collaboration between researchers and practitioners.

Academic papers may not be the most straightforward way for busy educators to find or process information. Practice briefs allow research-practice partnerships to share research-based knowledge from their work quickly and straightforwardly with educators who can readily use the information to inform their practice.

For example, read more about [the impetus for the STEM Teaching Tools practice brief initiative](#), a project of the [Research + Practice Collaboratory](#).

Step 2: Identify the Audience, Purpose, and Structure for the Practice Briefs

Identify the desired communication initiatives for the partnership. Briefs about research and practice have been shown to be useful resources for educational improvement projects. Practice briefs—of the kind discussed here—frame a problem of practice, identify relevant ideas and resources, and prompt practitioner reflection. Research briefs, on the other hand, synthesize existing research around topics and problems of practice in order to highlight known problems or findings that can inform progress.

For a particular practice brief project, formally identify your audience, purpose, and scope. A brief creation project often emerges out of a long-term relationship

between researchers and practitioners. This relationship could take the form of a university-district partnership, a collaboration between researchers and educator professional associations, or inquiry group meetings on topics that bring researchers and practitioners together. Importantly, this foundation can help participants better imagine or envision their audience—as researchers already have had close, frequent interactions with practitioners. This preexisting relationship can also help a practice brief creation project identify potential authors from a variety of backgrounds, both in research and practice.

Once audience, purpose, and scope have been identified, develop a desired structure and template for the briefs. Again, if a practice brief creation grows out of a preexisting research-practice partnership, participants are likely to be better-equipped to identify what categories of information practitioners need and what type of knowledge researchers and practitioners will be able to provide.

Step 3: Get Feedback from Stakeholders on the Approach

Develop a sample practice brief using the template created in Step 2. Put it through an iterative pilot testing process to “tune” the approach to the needs of all of the intended audiences.

Step 4: Identify an Editorial and Production Team

Develop the authoring, editorial, and production strategy for your initiative. Your editorial team should be a small group of both practitioners and researchers to be involved in the editing process of every brief. This

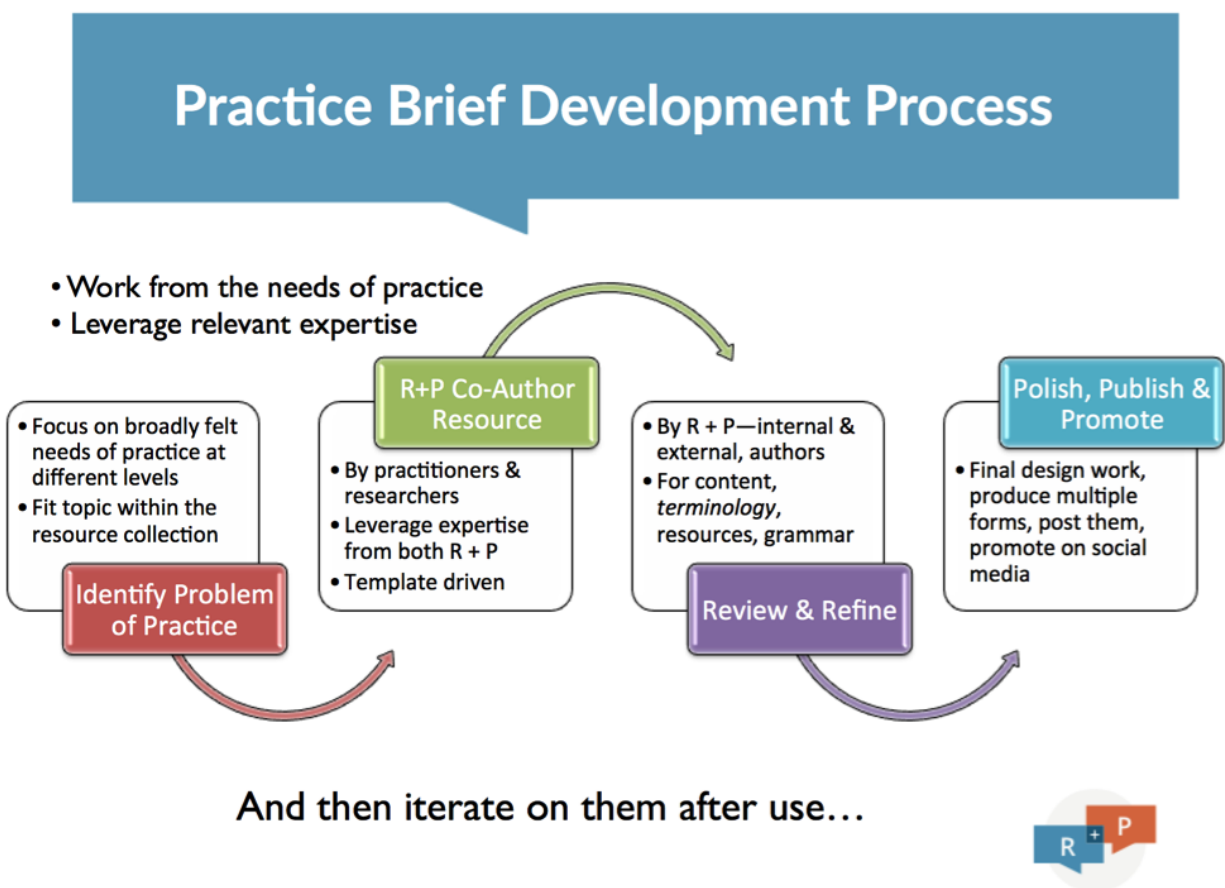
consistent editorial voice helps keep the tone and style of the briefs uniform across the collection.

The authors of your briefs should involve a variety of diverse voices from both research and practice. This group should be involved in identifying brief topics

and in the writing of the briefs.

A production team should develop a structured template for the layout of the briefs. A similar design approach to all briefs allows readers to more easily navigate and use the collection over time.

Part 2: How to Author a New Practice Brief



Step 1: Identify a Problem of Educational Practice to Focus On

The goal with each brief is to develop a resource that will support educational progress around broadly felt problems of educational practice. The identified problem or topic should be grounded in the needs of practitioners (classroom teachers, informal educators, district staff, etc.)—and not in what researchers simply believe to be relevant to practitioners.

The selected focus for the brief should also fit coherently into the broader collection of resources being developed. This helps ensure that the brief collection can serve as an ongoing learning resource in support of deeper learning and capacity building (e.g., by having individuals read a sequence of briefs).

Consider the scope of a particular brief carefully. Can it be adequately covered in the space laid out in your brief template? If not, you may consider breaking it up into smaller topics. However, you may elect to not feel completely bound by your template either; if a brief would be more helpful to your readers if you expanded the word count or change the template, you might elect to alter it or develop a non-standard brief.

Step 2: Researchers and Practitioners Co-Author an Initial Draft

Practice briefs are intentionally designed to include the most relevant knowledge from both research and practice in ways that illuminate and resource progress on the identified problem of practice. The best strategy to ensure this is for the briefs to be co-authored by

researchers and practitioners—from initial brainstorming to writing and through refinement. This allows for the knowledge from academic practice and from teaching practice to be leveraged and coordinated in the brief. As mentioned above, we recommend using a structured template for the layout of a brief.

Step 3: Review and Refine the Draft Through Internal and External Review

The editor/editorial team of the collection should deeply review and revise the brief in order for it to be further focused, elaborated, edited down, articulated with other briefs, and aligned to broader educational vision documents as appropriate (e.g., [The Framework for K-12 Science Education](#)). (For more on creating an editorial team, see Part 1, Step 4, above.)

If the editor is a researcher, a review pass should then be made by a practitioner to weed out unnecessary technical terms and to focus the language used on terms of practice. Technical academic language should be used strategically, as absolutely necessary. The revised brief is then sent out for external review by researchers and practitioners with relevant expertise. They are asked to suggest refinements to the texts and tools referenced in the brief. The editor incorporates

the reviewer feedback and produces an updated brief draft. This includes identifying the full set of potential images and external resources that are to be linked to. The document is then proofread for grammar and style.

Finally, the original authors are provided with the opportunity to refine the penultimate draft of the brief. The editor takes their suggested final edits and produces the final brief to the published.

Step 4: Polish, Publish, and Promote the Brief

The final production design work is completed for the brief—layout, linking, imagery, etc. A single brief might be represented in both web and standalone document forms—depending on the approach.

The brief is published in relevant outlets, probably including social media, in ways that fit the resource distribution strategy. Establishing partnerships with professional associations that serve practitioners is a very productive way to disseminate the practice briefs. Developing a systematic social media strategy is also a worthwhile investment of time and effort as a way to connect directly with practitioners.



This work was created as part of the Research + Practice Collaboratory project. The Research + Practice Collaboratory brings educators and researchers together to develop more equitable innovations for STEM teaching and learning. Learn more at researchandpractice.org.

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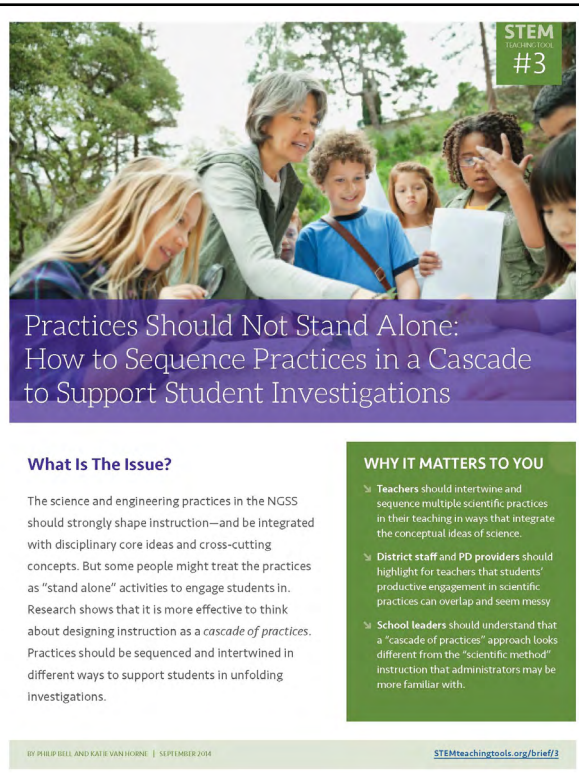
Part 3: Sample Practice Brief Template

This template is based on an existing Research+Practice Collaboratory brief collection called [STEM Teaching Tools](#). Template features may be more or less appropriate, depending on the specific strategy being employed.

STEM Teaching Tools Template

Based on [STEM Teaching Tool #3](#), stemteachingtools.org/brief/3

What is the Issue? Concise title and description of the problem of practice, topic, or issue



Practices Should Not Stand Alone: How to Sequence Practices in a Cascade to Support Student Investigations

What Is The Issue?

The science and engineering practices in the NGSS should strongly shape instruction—and be integrated with disciplinary core ideas and cross-cutting concepts. But some people might treat the practices as “stand alone” activities to engage students in. Research shows that it is more effective to think about designing instruction as a *cascade of practices*. Practices should be sequenced and intertwined in different ways to support students in unfolding investigations.

WHY IT MATTERS TO YOU

- Teachers should intertwine and sequence multiple scientific practices in their teaching in ways that integrate the conceptual ideas of science.
- District staff and PD providers should highlight for teachers that students’ productive engagement in scientific practices can overlap and seem messy.
- School leaders should understand that a “cascade of practices” approach looks different from the “scientific method” instruction that administrators may be more familiar with.

BY PHILIP BELL AND KAREN VAN DORME | SEPTEMBER 2014

STEMteachingtools.org/brief/3

Why it Matters to You? Rationale for how/why the issue is important for different stakeholders in education

Things to Consider: Knowledge from research and practice about the topic/issue, highlighting what educators need to know

Things To Consider

- It is important to realize that scientists engage in complicated *casades of practices* that are “messy” rather than follow some strict scientific method. [This video](#) highlights how science works.
- NGSS performance expectations (PEs) integrate practices with core ideas and cross cutting concepts. The PEs don’t frequently identify multiple practices, but that is not meant to imply that instruction should only engage students in one practice. The PEs are not curriculum. Rather, they highlight the kinds of student performances that are the learning targets of instruction.
- In a cascade of practices instructional approach, multiple practices may be combined and sequenced with one or more core ideas and crosscutting concepts to make up extended investigations. A cascade approach allows for a great variety of science and engineering investigations and supports students in making sense of the natural and built world. Depending on learning goals for a unit, it may be useful to highlight some practices more than others.
- There is no set sequence for how NGSS practices make up investigations. Investigations might start with posing testable questions, analyzing information, or interrogating a scientific model. They might culminate with creating explanations, models, arguments, or new testable questions that could be investigated.
- Engaging in students in investigations of this kind takes more instructional time than typical science instruction, but students can develop a deeper understanding of scientific concepts and more readily appreciate the creative endeavor of scientific work.

Attending To Equity

- The cascade of practices approach implies shifting agency for learning to students who should be supported in designing, carrying out, and building knowledge about the natural and built world. This makes the learning process more active and inclusive of all students. Inclusive instructional models should be used to provide multiple entry points to support more students in engaging in practices.

Recommended Actions You Can Take

- Study the diagram at the right showing a project-based instructional sequence involving multiple practices. Notice how the selected cascade helps students accomplish an authentic investigation.
- Learn about and implement instructional models that focus on engaging students in cascades of practices. Think about how specific models can help inform instruction in your classroom.

THINGS TO THINK ABOUT

- How satisfied are you with your current way of teaching science and engineering? How well does it engage students in extended experiences where they learn and apply concepts while engaging in the NGSS practices?
- It is productive to take up a small manageable investigation “cascade style” that can be integrated, repeated and refined throughout your teaching. What practices and core ideas would you want to start with?

Resist turning investigative sequences of science practices into new, fixed procedures that students are marched through—similar to how the scientific method has often been used instructionally.

A sample investigation might involve:
Develop and pose a testable scientific question (Practice 1)
Design a study and collect associated data (Practice 2)
Analyze and interpret those data (Practice 3)
Revise a model based on data analysis (Practice 4)
Represent & communicate results to an audience (Practice 5)
Cascade of Practices PBL Sequence
(from Bell et al., 2013)

ALSO SEE STEM TEACHING TOOLS:

#4 Multiple Instructional Models



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STEMteachingtools.org/brief/3

Reflection Questions: Prompts or quotes related to the topic that support educator reflection and discussion about their practice

Equity: Highlight the equity dimensions of the topic explicitly in every brief

Specific Guidance: Explicit steps that educators can take, and tools to support relevant work

Links to Related Resources: Other related resources in the practice brief collection