Discovery Education Science Techbook™ Professional Development provides a comprehensive professional learning experience designed to improve teaching and learning. Focusing on the knowledge, skills, and behaviors of educators necessary to facilitate engaging, flexible learning experiences leveraging technology and digital content – we believe classrooms can be transformed.

Discovery Education Science Techbook session activities are designed to model the facilitation of student inquiry and the effective use and integration of digital content. Educators work collaboratively with a Discovery Education Specialist to enhance their understanding and practice of the use and integration of technology to support the demands of academic standards. Each session builds on foundational skills and broadens participant efficacy with the use of digital resources and Web 2.0 tools, content knowledge, and instructional strategies.

Your district’s Science Techbook™ purchase includes a specific number of professional development days (based on the allocation table below), which can be delivered throughout the contract term. Additionally, district partners would receive free quarterly leadership/progress meetings with Discovery Education leadership to see how the resource is being used to support instruction and recommend a professional development plan based on the feedback from stakeholders.

The professional development sequence below addresses the most common areas of concern for content area teachers, maximizes the technology investment provided by the district, and provides increased sophistication and innovation with technology tools. Attached are course descriptions, which combined with instructional coaching, create an effective model for transforming teaching and learning.

<table>
<thead>
<tr>
<th># Total Student Licenses Purchased</th>
<th>Level of Professional Development</th>
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</thead>
<tbody>
<tr>
<td>1 to 100 student licenses</td>
<td>1 Three-Hour Webinar Series</td>
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<tr>
<td>101 to 300 student licenses</td>
<td>2 Three-Hour Webinar Series</td>
</tr>
<tr>
<td>301 to 499 student licenses</td>
<td>1 On-Site Day of Professional Development</td>
</tr>
<tr>
<td>For every 500 student licenses</td>
<td>2 On-Site Days of Professional Development</td>
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Below are course descriptions for recommended K-8 Science Techbook™ and our high school offerings for Biology, Chemistry, Earth & Space Science, Integrated Physics & Chemistry, and Physics. Please note these courses serve as recommendations and can be customized to meet specific district goals.

**K-8 Science Techbook Professional Development Courses Delivered In-Person**

**Overview**

I. Getting Started with Techbook™

II. Maximizing Student Engagement with Techbook

III. Centers-Based Teaching and Learning in a Techbook Classroom

IV. Read, Write, and Think Like a Scientist (2 day course)

V. Driving Student Achievement with Assessment & Intervention

VI. Science 2.0: Powerful Strategies for Increasing Engagement

VII. Embedding Process Skills with Science Techbook

VIII. Digital Storytelling in Science

I. Getting Started with Techbook

Let’s get started! Participants will be immersed in the 5E Inquiry model of science instruction, the framework of Science Techbook, to promote deeper levels of science understanding. Participants will be introduced to features of Techbook and effective instructional strategies for using digital content in science so that they may immediately start planning and implementing the content into their classrooms.

**Participants will be able to:**

» Utilize the key components of Discovery Education Science Techbook™

» Demonstrate the technical skills required to find and utilize assets found in Discovery Education Techbook™

» Identify at least three high leverage instructional strategies to use with media
II. Maximizing Student Engagement with Techbook™

Uncover the power and potential of the Science Techbook™ Student Center. Participants will learn how to promote and differentiate student learning through the use of Discovery Education tools such as Writing Prompt, Assignment Builder, and Assessment Manager.

Participants will be able to:

» Create a classroom of students for the purpose of assigning materials directly to individuals and classes

» Create a media infused writing prompt

» Create a media infused quiz, which can include both questions from a bank as well as those that are self-created

» Create a digital assignment that aggregates several pieces of media together with instructions for each piece

III. Centers-Based Teaching and Learning in a Techbook Classroom

Experience the future now. Participants will be immersed in a Discovery Education Science Techbook experience. Using a center-based approach, participants will experience the 5Es of a model lesson first-hand, by moving through a variety of stations designed to build student content knowledge. Directions, management, resources, and planning techniques for centers are shared. Educators will create their own centers using materials, planning template, and guidance from a Discovery Education Professional Development Specialist.

Participants will be able to:

» Explain how the 5E instructional model builds conceptual knowledge and deepens understanding

» Learn management techniques for planning and implementing a centers-based instructional model

» Select materials from Discovery Education Science Techbook and create a centers-based lesson
IV. Read, Write, and Think Like a Scientist (2 day course)

Begin to integrate literacy strategies into your science lessons. When approached from a stance of inquiry, reading and writing in science will develop literacy skills as well as content knowledge and scientific thinking. One serves the other. Participants will learn how this reciprocal relationship is fostered with rich text, digital media, interactive writing, and high-yield reading strategies leading to critical analysis skills applicable to written text, science labs, media, and more.

Participants will be able to:

» Approach reading and writing in science from a stance of inquiry

» Model scientific investigation with a variety of materials including reading passages, contemporary news articles, charts/graphs, hands-on activities, science labs, and digital media

» Embed content area literacy routines within each lesson

» Cite specific textual evidence to support analysis of science and technical texts

» Write scientific explanations, which include a scientific claim supported by multiple sources of evidence and tied together with logical reasoning

V. Driving Student Achievement with Assessment & Intervention

Dig deeper with the Discovery Education Science Techbook™ robust assessment management tool. The Discovery Education Assessment tool is designed to help teachers create custom, standards-based assessments, concept-based assessments, and interventions. Teachers will learn to assign concept assessments and review class assessment results on one or multiple assessments to look for patterns in the data. During this full day session, participants will learn to develop formative and summative assessments using the 5E model. They will also develop skills to use the assessment management tool to its fullest potential to guide instruction and drive student achievement.

Participants will be able to:

» Create custom, standards-based assessments

» Access and utilize a variety of assessment reports to reflect on instruction and identify patterns in the data

» Use assessment data to employ resources to enhance and reinforce instruction and provide effective remediation
VI. Science 2.0: Powerful Strategies for Increasing Engagement

Turn on the creativity. Participants will learn how to use Web 2.0 tools to foster collaboration, student critical thinking, engagement, and science content knowledge acquisition using resources from Discovery Education Science Techbook™. Participants will put into action the principles of universal design for learning using Web 2.0 tools in conjunction with digital media to provide multiple means for students to represent and express their scientific understanding. Time will be provided for participants to create their own projects and lessons with support from a Discovery Education Professional Development Specialist.

Participants will be able to:

» Explore a variety of tools to foster purposeful collaboration, creativity, and critical thinking in a 5E science lesson

» Download and manipulate resources from Discovery Education Science Techbook for incorporation in student projects

» Select at least two tools and plan a media-infused student project incorporating both tools

VII. Embedding Process Skills with Science Techbook

Scientific investigation is critical to science instruction. Participants will develop instruction that builds students’ scientific reasoning skills by utilizing the tools and resources in the model lesson. The skills and dispositions needed for scientific inquiry are emphasized throughout this course and participants will see how small changes in science instruction can allow students to grow their scientific reasoning and research skills. Participants will leave the workshop with the skill set to implement stronger, inquiry-driven science instruction in their classrooms.

Participants will be able to:

» Explain the importance of scientific investigation and process skills and why it needs to be embedded in every unit and concept

» Identify critical skills for inquiry and explicitly address them in each unit or concept

» Utilize tools in the process skills library effectively
VIII. Digital Storytelling in Science

Explore innovative ways for students to demonstrate understanding of scientific concepts. Participants will learn to combine text, images, audio, and video to tell stories to make scientific concepts stick. Digital Storytelling will engage your students in higher levels of scientific thinking as they create movies to show their level of understanding about a science concept. Participants will use their PC, MAC, or even a mobile device to create simple to sophisticated digital stories as they explore the art of digital storytelling and the ways it can be used in a 5E lesson.

Participants will be able to:

» Combine text, images, audio, and video to create movies using tools such as PhotoStory, iMovie, Movie Maker, and more

» Explore the literacy component of movie making through the use of storyboards, script writing, and recording narration

» Plan, manage, and assess student digital storytelling projects
High School Science Techbook™
Professional Development Courses Delivered In-Person

Biology, Chemistry, Earth & Space Science,
Integrated Physics & Chemistry, and Physics

Overview:

I. Getting Started with Discovery Education High School Science Techbook™

II. Maximizing High School Student Engagement with Techbook™

III. Scientific Literacy: Developing Disciplinary Thinking (2 day course)

I. Getting Started with Discovery Education High School Science Techbook™

Bring the technological revolution into your classroom with Discovery Education’s complete digital program that replaces traditional textbooks for high school science. This course will immerse participants in effective instructional strategies for using digital science content. Participants will take part in inquiry-based activities that will model best practices in science instruction as they learn how to navigate Discovery Education High School Science Techbook. Participants will gain an understanding of the multitude of science resources and materials available through Techbook. Participants will thoroughly explore the 5E inquiry model of science instruction to promote deeper levels of science understanding.

Participants will be able to:

» Utilize the key components of Discovery Education Science Techbook

» Demonstrate the technical skills required to find and utilize assets found Science Techbook™

» Identify at least three high leverage instructional strategies to use with media
II. Maximizing High School Student Engagement with Techbook™

How do you get high school students engaged with a resource? One word: Techbook. Participants will learn how to promote and differentiate student learning through the use of Digital Explorations Hands-On Labs and Discovery Education tools such as Writing Prompt Builder, Assignment Builder and Assessment Manager.

Participants will be able to:

» Adapt and utilize exploration labs for multiple activities within a concept
» Create a media infused writing prompt
» Create a media infused quiz, which can include both questions from a bank of pre-made items as well as those that are self-made
» Create a digital assignment that aggregates several pieces of media together with instructions

III. Scientific Literacy: Developing Disciplinary Thinking (2 day course)

Reading and writing in the secondary science classroom should mimic the work of real world scientists where reading is used to inform first-hand investigation and writing is used to communicate and share results for debate and deepen insight about the world around us. These sessions focus on the unique challenges and opportunities offered by scientific text, position literacy skills within a framework of investigation, and offer opportunities for students to develop a deeper insight into how to foster independent learning and disciplinary thinking skills required in today’s classrooms. Participants will learn how to foster these skills with rich text, digital media, interactive writing, and high-yield reading strategies leading to critical analysis skills applicable to written text, science labs, media, and more.

Participants will be able to:

» Delineate the challenges and opportunities in scientific text
» Approach reading and writing in science from a stance of inquiry
» Model scientific investigation with a variety of materials
» Embed content area literacy routines within each lesson
» Cite specific textual evidence to support analysis of science and technical texts
» Write scientific explanations, which include a scientific claim supported by evidence