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# STEMscopes:preK-12DigitalSTEMCurriculum,Kits, andProfessionalDevelopment (<http://www.edtechroundup.org/reviews/stemscopes-prek-12-digital-stem-curriculum-kits-and-professional-development>)

9/17/2016



STEMscopes (<http://www.acceleratelearning.com/>) from Accelerate Learning, Inc. offers an online, comprehensive, hands-on preK-12 STEM curriculum for schools. They have an enormous collection of content, support material, science kits, lesson plans, inquiry strategies, professional development and so much more. If you're looking for an all-encompassing STEM solution for your school district, STEMscopes is an excellent and affordable resource to check

out. Let's take a look!

Before jumping into the review, let's start with this overview video from the STEMscopes team:



STEMscopes is designed to be a comprehensive system to meet all of your school's STEM needs. From curriculum, to professional development, to classroom kits (which can also be built on your own with common supplies), STEMscopes covers a wide range of resources, which we'll break down over the course of this review.

As for pricing, you can get access to the curriculum for as little as \$4.75 per student, which compared to the cost of textbooks (which have no where near the quantity and quality of engaging materials), that's a significantly lower price point.

## Reviews

Here you can find the Round Up's collection of in-depth reviews on the latest programs, apps, websites, and more.

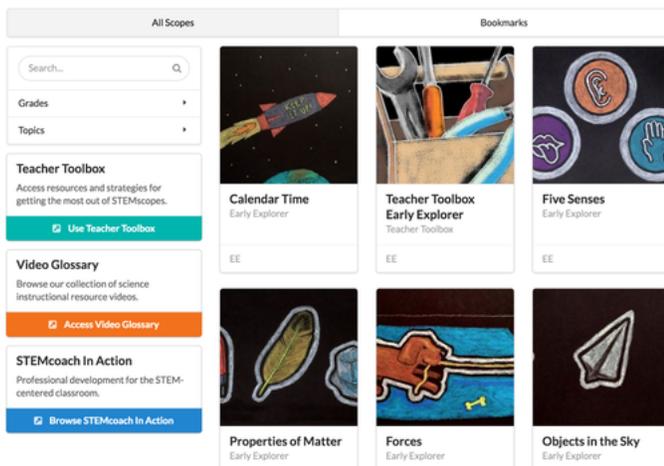
Make sure to click the review's title or the Read More link for the complete review!

## Featured



# Scopes

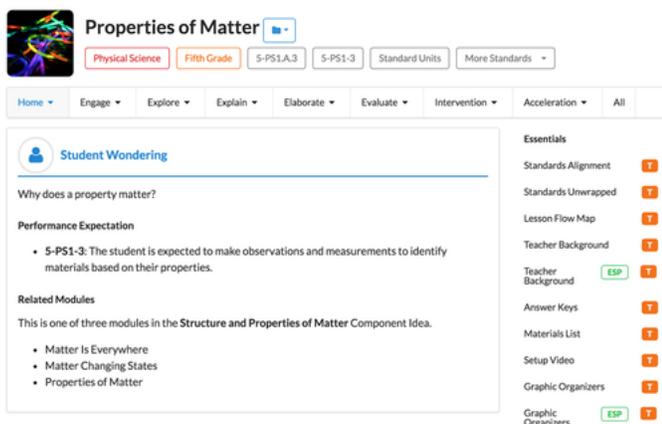
“Scopes” are what STEMscopes calls their lessons. Each Scope covers a particular topic, is aligned with CCSS and NGSS, and offers detailed plans on how you can implement the lesson in your classroom. These lessons are designed to take anywhere from a single class period, to several weeks, depending on how far in-depth you as a teacher want/need to go. You can filter Scopes by grade level or topic area, or you can just perform a search at the top left to find what you’re looking for.



When you first click on a Scope, you’ll be on the Home page and you’ll see a brief overview of what the lesson is all about, but don’t let the fool you, the amount of content and support they have available for each Scope is absolutely enormous. The Home page is essentially meant to be the equivalent of the Teacher Edition portion of a textbook, and will cover the basics of what the teacher needs to know.

Across the top you’ll see all the different stages of the lesson broken down into the 5E+I/A framework ([http://www.bscs.org/sites/default/files/\\_legacy/BSCS\\_5E\\_Instructional\\_Model-Executive\\_Summary\\_0.pdf](http://www.bscs.org/sites/default/files/_legacy/BSCS_5E_Instructional_Model-Executive_Summary_0.pdf)) (Engage, Explore, Explain, Elaborate, Evaluate, Intervention, Acceleration). Each of those stages has resources and activities that you can put to use in the classroom.

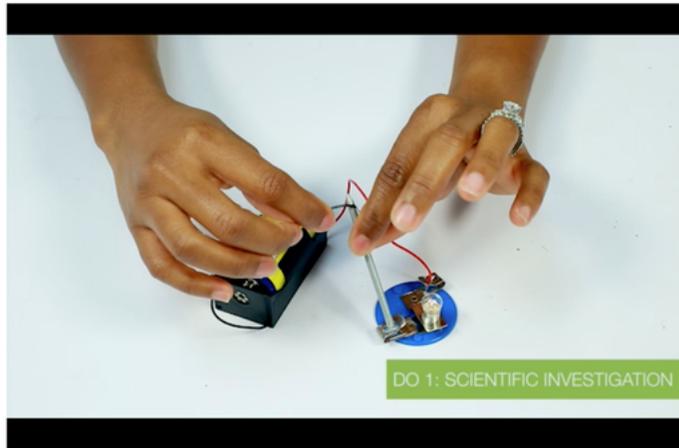
Along the right side you’ll see all the lesson “Essentials.” This are things like the specific standards that are covered, the graphic organizers you can use in the lesson, any teacher background material you might need, and so on. Again, the amount of support STEMscopes provides is both enormous and wonderful. What I like best is that if you don’t need it, you don’t have to use it (and it’s not cluttering up your experience), but if you want it, it’s there for you.



# Awards



One of the best places to start is the setup video. The video is meant to help the teacher get started with a particular scope, and covers all the basics of what you'll need to know and prepare for the lesson. They are great 5-minute overviews and incredibly helpful for getting a quick start to each scope.



(/uploads/2/6/5/7/2657242/screen-shot-2016-09-15-at-9-36-43-am\_orig.png?547)

To give you another example of some of these support resources, for the Properties of Matter Scope, if we look at the Graphic Organizers, they've got a student handout you can use, an answer sheet, and you can also view the handout in spanish as well.

Soluble? a A Speech Ver en español Bookmark Element

The Graphic Organizer provided is a note-taking device students can use as they move through this scope. This Graphic Organizer directly reflects the content students should master in this scope.

Student Handout Download

Answer Key Download

If I look at the Lesson Flow Map I get a detailed breakdown of all the lesson components, how they're aligned with the specific standards, and how they meet the different stages of the 5E + I/A model. It's a quick snapshot that gives you an easy to understand overview of all the lesson components.

This way, if you're only trying to meet certain standards, you might only want to do certain parts of the Scope. It really is designed to give teachers complete freedom in putting together the resources that they want to use, so that they can best meet their classroom and student needs.



**Teach 100**



5th: Properties of Matter				
Performance Expectation(s) 5-PS1-3: Make observations and measurements to identify materials based on their properties.				
	Engage	Explore	Explain/Elaborate	Evaluate
Science and Practices	Phenomenon Explanations: Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon or to test a design solution. Hook	Do 1: Scientific Investigation Do 2: Activity	Extensions	CER Multiple Choice
Disciplinary Core Ideas(s)	5-PS1.A.3 Structure and Properties of Matter: Measurements of a variety of properties can be used to identify materials. (Boundary: At this grade level, mass and weight are not distinguished, and no attempt is made to define the unseen particles or explain the atomic-scale mechanism of evaporation and condensation.) Hook	Do 1: Scientific Investigation Do 2: Activity	Extensions Reading Connections	CER Open-Ended Multiple Choice
Cross-Cutting Concepts(s)	Standard Units: Standard units are used to measure and describe physical quantities such as weight, time, temperature, and volume.		Math Connections Extensions	
Common Core ELA	W.5.7: Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.	Do 1: Scientific Investigation Do 2: Activity	Extensions	
	W.5.8: Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.	Do 1: Scientific Investigation Do 2: Activity	Reading Connections	CER Open-Ended
	W.5.9: Draw evidence from literary or informational texts to support analysis, reflection, and research.		Reading Connections	CER Open-Ended

That being said, the team **highly** recommends always using the Engage and Explore tasks. If you're only going to have time for two steps of the model, those are the most educationally significant steps to use. Additionally, if you are planning on going through the entire sequence, the flow does matter. In other words, it's important to start with the Engage step (to get your students hooked on the topic and understand the relevance), and then to move forward from there.

This might be a switch from a typical pedagogical strategy of starting with a lecture of the content, but all our their research and case studies suggest that following the flow they have laid out does make a significant difference in student achievement.

Finally, all of the curricular resources within a Scope can be printed out or used digitally, so whether you're in a 1:1 environment, or have less technology access, the materials are still available. You can even purchase short books of each Scope that STEMscopes will send out to you if you prefer more of a textbook experience.

## Kits

A big part of the STEMscopes curriculum is hands-on activities. For each Scope you'll see a Materials List which covers everything you need for the various hands-on activities that Scope contains.

By and large, all of these supplies can be purchased at your local Walmart or Target. These supplies are meant to be inexpensive, so that teachers can spend money on field trips, lab equipment, or be able to still conduct activities in a classroom with a limited budget.

Compared to other kits I've seen (e.g. FOSS kits), these kits come at an incredibly reduced price. You can order the kits directly through the company, if you'd like them delivered to your classroom and organized for you, or you can enter in your number of students and get a breakdown of what you need to purchase or order.

Total number of students	Maximum class size
<input type="text" value="150"/>	<input type="text" value="25"/>
Maximum number of groups	Total number of classes
<input type="text" value="5"/>	<input type="text" value="5"/>

Quantity per use	Units	Item	Usage	Need	Total Quantity
<b>Engage</b>					
Accessing Prior Knowledge					
1		Journal Page	per student	consumed	150
Hook: Physical Properties 21 Questions					
1	set	Matter Cards	per group	consumed	25
<b>Explore</b>					
Do 1: Scientific Investigation - Figuring Out Physical Properties					
1		Data Recording Sheet	per student	consumed	150
1		Metal spoon*	per group	reusable	5

## Assignments & Assessments

Another major component of STEMscopes are the assignments and assessments. Within each Scope you have an enormous variety of activities, mostly designed to facilitate hands-on learning.

As mentioned above, these assignments can be sent out to any students you have enrolled in the digital system, or they can be printed out to be used in your class.

Color in the graph to show how many puffs through the straw it took to move each object over the finish line.

10		
9		
8		
7		
6		
5		
4		
3		
2		
1		
Number of puffs	Paperclip 	Wooden Block 

The assignments do cover basic vocabulary and content acquisition skills as well, but by and large they're meant to get students making, building, and experimenting, rather than just answering lower level recall questions.

Additionally, there are a wide variety of research-based activities as well, along with cross-curricular math and engineering activities, so you can work on information literacy and mathematics skills from

within these lessons as well (hence the STEM).

**Math Moment**

NGSS specifies no Common Core Math alignment; however, we suggest connecting this learning task to math standard *5.NF.B.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. In this activity, each yellow card can be represented as 1/15 of a sheet of construction paper.*

Have students **draw a model** to represent how many yellow cards you could get from three pieces of construction paper and write the mathematical **expression** to match.

Finally, if your students do have access to technology and are able to complete the assignments online within STEMscopes, you can also grade and provide feedback to your students from within the system.

## Professional Development

With STEMscopes being such a robust and comprehensive service, they offer a large variety of professional development opportunities for teachers as well.

To begin, any school or classroom that signs up for STEMscopes will have access to an online onboarding training from the STEMscopes team. This training will cover all the basics of how to get started using the software and implementing their service within your classroom.

The next level up from that is the STEMcoach community, which is a collection of blogs and resources that you can use for more self-directed professional development.



Within each lesson, you'll also see STEMcoach in Action callouts. These will link to specific support resources that are designed to help you prepare for whatever topic or lesson you're working with at the time. These include videos, links to additional resources, topic explanations, and a whole lot more.

**STEMcoach in Action**

The classroom environment must be a safe place for students, so that they feel comfortable taking risks and engaging in the learning experience. This teacher action includes all those practices that encourage a positive relationship between the teacher and the student, between students, and extends to the wider community. For further information regarding Creating a Positive Classroom Culture, please click the provided link.

[Visit Site](#)

All of those above resources are available free to every STEMscopes member. If you're looking for more personalized trainings and webinars or 1:1 coaching, STEMscopes has those available too, but those sessions do have to be paid for.



## WrapUp

Overall, I strongly believe that STEMscopes is an incredible resource. The 5E model has been around for well over 30 years now and has been shown to be an excellent STEM model for improving student understanding and achievement. If you're interested in reading some of the STEMscope specific case studies, those are available here ([http://www.bsccs.org/sites/default/files/\\_legacy/BSCS\\_5E\\_Instructional\\_Model-Executive\\_Summary\\_0.pdf](http://www.bsccs.org/sites/default/files/_legacy/BSCS_5E_Instructional_Model-Executive_Summary_0.pdf)), and they have quite a few!

If your school is up for renewal of science textbooks, I would absolutely consider making a switch to STEMscopes. Their resources are regularly updated, come at a significantly cheaper price point, and are available in both print or digital form. On the digital side, any web-enabled device will be able to access the system.

STEMscopes offers a comprehensive preK-12 STEM curriculum that is hands-on, engaging, and authentic, at a price that is hard to beat. There are an enormous variety of high-quality resources, all aligned with the 5E model and CCSS and NGSS, and all supported by a robust collection of professional development resources.

If you're interested in learning more, you can check out a free STEMscopes trial ([http://info.acceleratelearning.com/k12\\_trial](http://info.acceleratelearning.com/k12_trial)) to learn more and see if the resource is a good fit for your school.



*The opinions expressed in this review are my own.  
I was not compensated for writing this review.*