Khan Academy

MATH TEACHER TRAINING BOOKLET

A free, world-class education for anyone, anywhere

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Training Provided by

TITLE:_____

Let's Get Started!

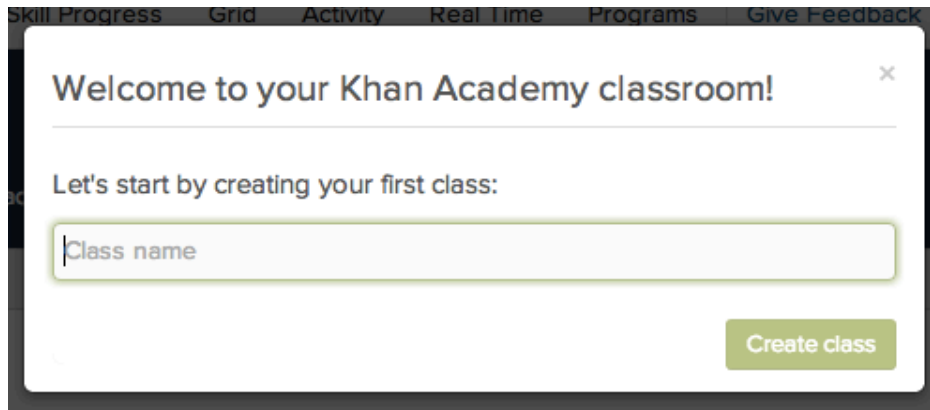| We'll fill out these columns now…		…and this later.
What do you already **know** about Khan Academy?	What do you **want** to learn about Khan Academy?	What did you **learn** about Khan Academy?

SCAVENGER HUNT /
REAL LIFE SCENARIOS

TIME TO EXPLORE!

❑ Go to www.khanacademy.org

❑ If you already have a Khan Academy account, log in.

❑ If not, click "Teachers, start here."

❑ Choose a signup option and check it off below for future reference.

      ❑ Facebook

      ❑ Google

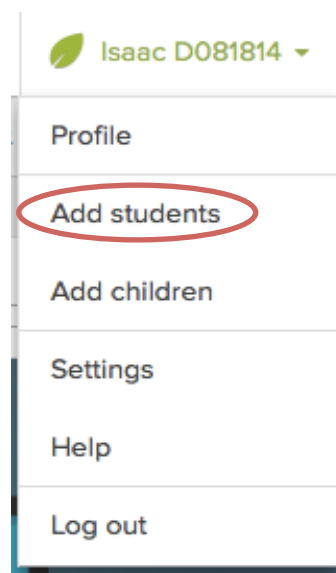   ❑ Email

         ❑ Password: _____

CREATE A CLASS

Welcome to your Khan Academy classroom! ✕

Let's start by creating your first class:

Class name

Create class

❑If you see this message, follow the prompts to create a class.

❑ If not, click your name at the top right. A menu will open.

Home 🔔 ▾ 🌿 Isaac at KA ▾

🌿 Isaac D081814 ▾

Profile

Add students

Add children
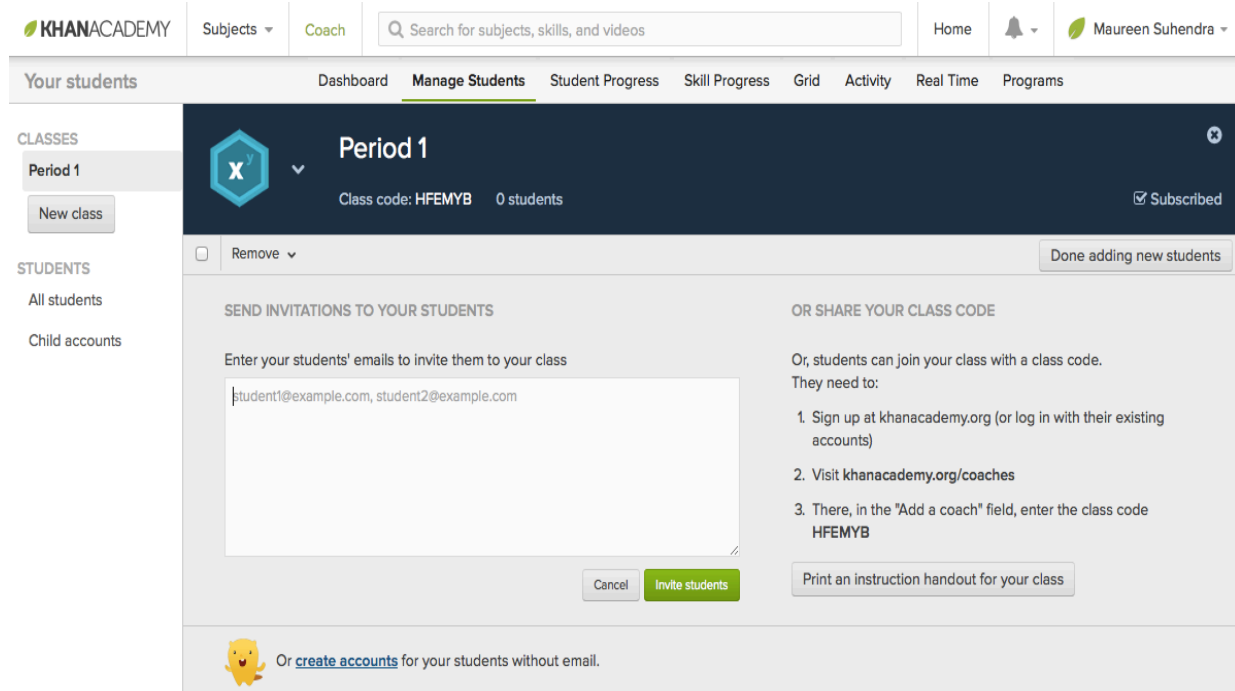
Settings

Help

Log out

❑ Click "Add students" or "Your students."

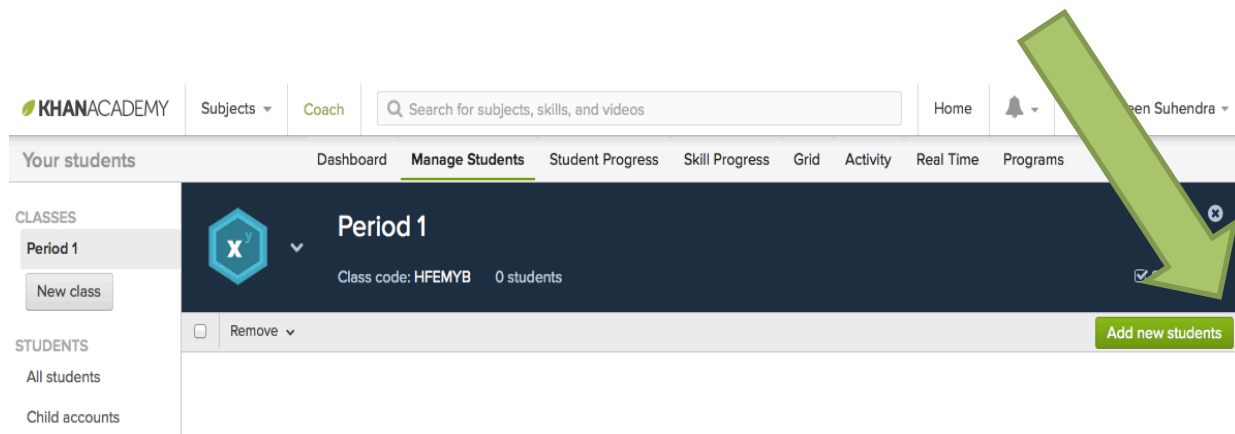❑Click the green "Add a class" button.

Add a class
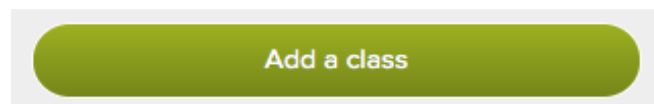
ADD A STUDENT

You should see this box.
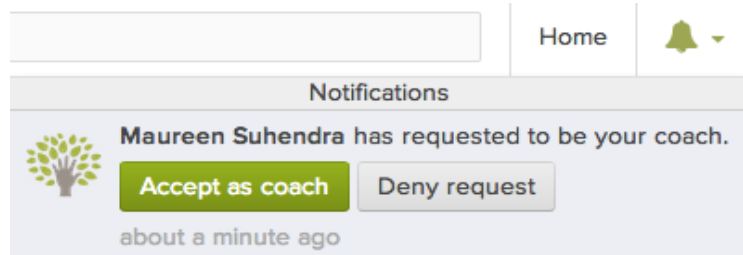
☐ If you don't, click "Add new students" to get to it.

☐ Find a partner. Follow the prompts on your screen to add your partner as a student.

- You must add a student in order to complete the other activities in this packet.

ADD A STUDENT (continued)

Your partner will see a notification at the top right of their screen.

Home | 🔔 | Isaac at KA ▾

❏ Ask your partner to open this notification and click "Accept as coach."

Home 🔔 ▾

Notifications

Maureen Suhendra has requested to be your coach.

Accept as coach | Deny request

about a minute ago

Your partner will then appear on your student list.

Period 1

Class code: HFEMYB 1 student

☑ Subscribed

☐ Remove ▾ Add a current student

Add new students

☐ Isaac at KA isaac@khanacademy.org
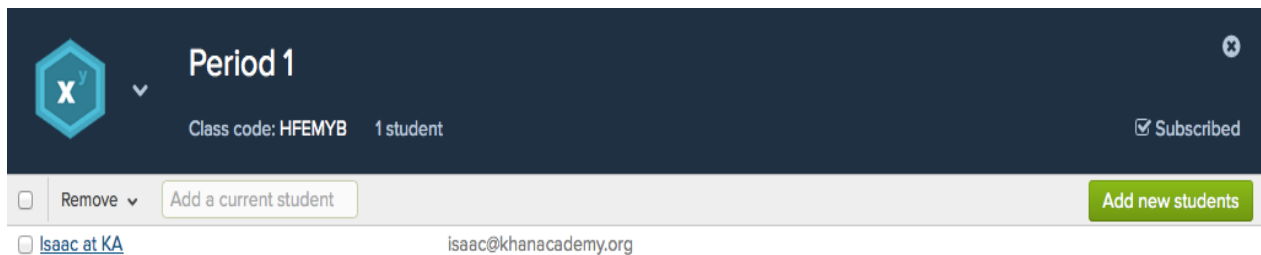
Pro tip: There are multiple ways to add students. When you're ready to add your real students, check out the guide on p. 17.

WAYS TO ADD STUDENTS

Do your students have Khan Academy accounts already?

Yes → ❏ Paste the usernames or email addresses for your students' accounts in the box (1), or ask your students to add you as a coach.*

No ↓

Do your students have email?

Yes → ❏ Paste your students' email addresses in the box (1).

No ↓

❏ Click "Create accounts for students without email." (2). You'll need students' birthdays and (for children under 13) parent email addresses.
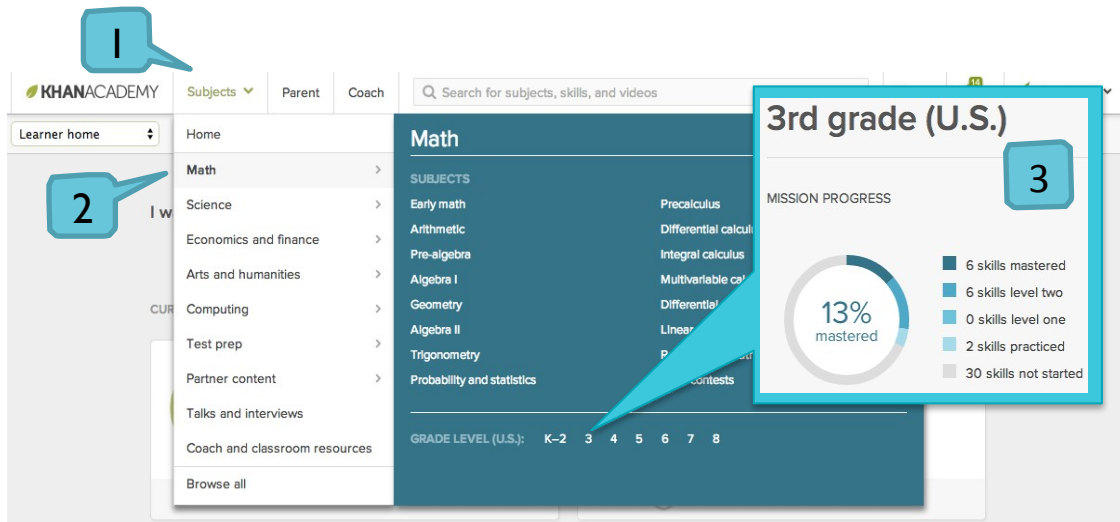
❏ **IMPORTANT: Add the presenter to your student list now.**

Search "how to add a coach" on KA for printable instructions.

WHAT IS A MISSION?
WHAT WILL MY STUDENTS SEE?

1. Open the SUBJECTS menu.

2. Open the MATH submenu and pick the grade or subject you teach.

3. You'll see this mission on your learning dashboard.

If you don't see a "mission progress" graph, click "Unlock your Learning Dashboard" or "Get a personal path."

☐ Practice some skills and complete a mastery challenge (if available). Please spend at least 5-10 minutes exploring your learning dashboard.

Pro tip: Click "Show all skills" to see the breakdown of the mission.

MISSION FAQs

How long does it take to complete a mission?

Just like putting a man on the moon, missions are meant to represent major commitments, and completing one should be considered a big accomplishment. With that said, the amount of time and effort it takes to complete a mission will depend on who the student is, where they start, and how fast they go. If you expect a student to take about nine months to learn an entire year's worth of material, it's reasonable to expect that it would take about nine months to

What does it take to "complete" a mission?

A mission is complete once you've mastered all grade-level skills in that mission—we call these mission-level skills.
In order to master skills, students will need to take Mastery Challenges on a regular basis. Mastery Challenges mix together different types of problems and spaces them across days to helps students retain their math skills over time.

What happens when my student completes a mission?

We'd hate to spoil the surprise, but let's just say that your student will have a party on her learning dashboard. The student will also get a coveted mission badge, plus the feeling of great accomplishment. Once a mission is complete, your student can move on to the next one!

I have students who are below grade-level. Which mission should they be working on?

We recommend having students work on the Early Math, Arithmetic, or Pre-Algebra missions. You can also use coach recommendations for foundational skills. This allows students to remediate while staying within their grade level mission.

How is content curated within each grade level mission?

We have a group of math educators who create and curate the skills within each grade level mission. If you're an educator in the U.S., you should know that we've used the Common Core math standards to drive the creation of all of our math skills. We believe these standards are well-written and offer a great progression through math concepts.

Will more missions be added?

Yes! We hope to have all of K-12 math (including calculus) covered by Fall 2014.

SITE TOUR: STUDENT VIEW

Notes
A couple questions to consider: • *What's the difference between a practice skill and a mastery challenge?* • *Why is it important for students to complete mastery challenges?*

SCENARIO #1
Recommend a Skill

1. Go to khanacademy.org/coach

2. Go to Skill Progress

3. Select a topic to see the skills within it

4. Select a skill to recommend to your student

5. Click "Recommend"

6. Make sure there is a check by your student's name

7. Click "Recommend" again to confirm

SWITCH TO COACH DEMO

> TO MOVE FORWARD, YOU MUST FOLLOW THESE INSTRUCTIONS

- ❑ If you have more than one window or tab open, close out of all but one.

- ❑ Go to khanacademy.org/coach/demo

- ❑ Click the blue or green ACCESS button.

- ❑ If you don't see this blue bar at the top of your screen, ask for help.

You are logged in to the Khan Academy Demo account, access is limited! **Remember to log out**

The Coach Demo is a fake account we've created so that you can explore coach reports for a group of active students. The students in this account are all Khan Academy employees. You might find that these "students" work at odd hours, while some are far more active than others. Keep in mind that your students' data may look a bit different.

SCENARIO #2
Set Up Peer Tutoring

1. **Go to Skill Progress.**

2. **Set your filters to match the image above**

   Class: Sample class A

   Mission: 7th grade

   "Struggling" checked

3. **Click "Converting fractions to decimals."**

❑ Who is struggling with this skill? _____

❑ Who has mastered it and could serve as a peer
   tutor? _____

SCENARIO #3
Assess Mission Progress

Class: Sample class A
Mission: 7th grade

The bar graph you see may not match this page. The students in this class are Khan Academy employees, and we are always working to master more skills!
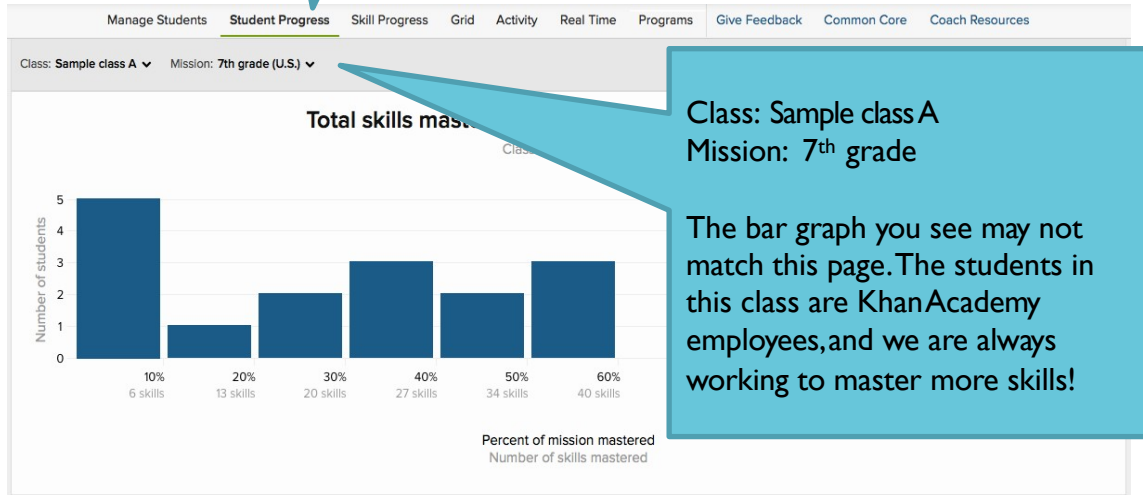
1.   Go to Student Progress.

2.   Make sure your filters match the image above.

❑   Have any students completed their mission? If so, name one. _____

❑   Who has mastered 10-20% of mission-level skills? _____

SCENARIO #4
Plan Targeted Tutoring

1. Scroll down to the bottom half of the Student Progress report.

2. Make sure your filters match those above.

3. Click the red square to sort students by the number of skills they've struggled with in the last seven days.

   ❑ Who has struggled with the most skills?

   _____

4. Select this student.

5. Which skill(s) did they struggle with? (Look for red!)

   _____

WHEN MISSIONS AREN'T IDEAL

We recognize that not everyone will be able to use missions—you might have a different set of standards, or your students might have extremely limited access to technology.

How do I find the right content?

Identify the standards or concepts you want to teach. Find relevant content on Khan Academy by using 1) the **search bar** 2) the **LEARN** button which will show you our many tutorials or 3) our **Common Core Map.**

Types of Playlists

Foundational Playlists
List the top 10-20 skills you think every student must know before starting on grade level content. Find those skills on Khan Academy and create a playlist.

Differentiated Playlists
Create 2 playlists for your students: one covers the basics, and the second covers more advanced topics. This way students can advance within the unit if they are ready.

Unit Playlists
Look at the standards and concepts you want to cover in a unit. Search for the relevant skills on Khan Academy, and create a playlist of skills. Depending on how much access to tech your students have, you may want to limit the number of skills to the most important 5-10.

Project Playlists
Identify the prerequisites needed for a project, and create a list. Have students complete them before / during the project.

Implementing Playlists

Use any of the following ways to have students go through playlists.
1) Create paper playlists / post them in your room
2) Do the above, and have students add them to their own Learning Dashboards
3) Use Coach Recommendations to virtually assign students sets of skills

No need to be fancy, use whatever way you feel most comfortable with! Be sure to ask students to work through playlists in order. Otherwise, students may jump to another skill if the one they are working on becomes challenging, resulting in lots of jumping and little learning.

PLAYLIST EXAMPLE #1

School, grade, teacher: KIPP Heartwood, 6th grade, Anna Gunderson
Timeframe: Students worked at their own pace through this playlist during their Fractions unit
Other details: Anna used data from her coach reports to focus on struggling students and encouraged peer tutoring

Do you have what it takes to become a

FRACTION NINJA???

Become proficient on the following modules:

FRACTION UNDERSTANDINGS

Module	Date Proficient
Recognizing Fractions	
Equivalent Fractions	
Equivalent Fractions 2	
Simplifying Fractions	
Comparing Fractions 1	
Comparing Fractions 2	
Converting Mixed Numbers and Improper Fractions	
Ordering Fractions	

FRACTION OPERATIONS

Module	Date Proficient
Adding Fractions with Common Denominators	
Subtracting Fractions with Common Denominators	
Adding Fractions	
Subtracting Fractions	
Adding and Subtracting Fractions	
Fraction Word Problems 1	
Adding and Subtracting Mixed Numbers	
Multiplying Fractions	
Dividing Fractions	

PLAYLIST EXAMPLE #2

School, grade, teacher: Summit High School, 9th grade, Zack Miller

Timeframe: Students work at their own pace within a week and are expected to hit target deadlines for their work on Khan Academy, projects, and activities. They can also work ahead.

Other details: Mr. Miller uses data to host seminars for specific groups of students each week. He intentionally integrates hands-on projects and group work alongside Khan Academy.

Checklist 2: November 21 to December 1   Name: _____

GOAL

Students will be able to work interchangeably between the different representations of linear relationships: verbal/visual description, data table, graph and algebraic rule.

SHOULD BE COMPLETE ALREADY

Last Week's Khans:

- ☐ Functions 1
- ☐ Interpreting Linear Equations
- ☐ Distributive Property with Variables
- ☐ Graphing Points
- ☐ Graphing Points 2

Older Khans:

- ☐ Distance Formula
- ☐ Midpoint Formula
- ☐ Pythagorean Theorem 1
- ☐ Triangle Inequality Theorem
- ☐ Geometry 1
- ☐ Simplifying Radicals

KHAN DUE BY TUESDAY, NOVEMBER 29th

- ☐ Slope of a Line
- ☐ Line Graph Intuition
- ☐ Equation of a Line
- ☐ Solving for the y-intercept
- ☐ Graphing Linear Equations
- ☐ Converting Between Slope-Intercept and Standard Form
- ☐ AT LEAST 2 NEW VIDEOS

UPCOMING KHAN

- ☐ Graphing Inequalities 1
- ☐ Graphing Inequalities 2
- ☐ Line Relationships
- ☐ Graphing Systems of Equations
- ☐ Systems of Equations

DUE MONDAY, NOVEMBER 28th

☐ **Slope Project:**

Instructions: Find some stairs. Calculate their slope. Describe how you did it. Take a picture. I'm looking for stairs with the steepest and shallowest slope.

DUE BY WEDNESDAY, NOVEMBER 30th

☐ **Linear Relationships Project 1: "Thrifty Math Teachers"**

Paper copy of this project should be turned in to Mr. Miller on or before due date.

DUE BY THURSDAY, DECEMBER 1st

☐ **Linear Relationships Project 2: Microsoft Excel Activity**

This project sent via e-mail. When completed, should be returned to Mr. Miller via e-mail as an attachment.

Concept Assessments on Friday, December 2nd (and always during Office Hours every Wed, Thurs & Fri)

PLAYLIST EXAMPLE #3

School, grade, teacher: Oakland Unity High School, 9th grade, Peter McIntosh & Kallie Berg

Timeframe: Students move at their own pace within a given week and can also work ahead.

Other details: OU used this list during their summer school. Students completed work at school and at home, and teachers used data to give mini-lessons during the school day. If students completed all skills by Thursday, they didn't have to come to school on Friday.

Week 1:	Week 2:
Addition 1	Multiplying fractions 0.5
Addition 2	Multiplying fractions
Subtraction 1	Dividing fractions 0.5
Subtraction 2	Dividing fractions
Number line 1, 2, 3	Adding fractions with common denominato
Ordering negative numbers	Subtracting fractions with common denom
Adding negative numbers	Adding fractions
Adding and subtracting negative numbers	Subtracting fractions
Multiplication .5	Comparing improper fractions & mixed #'s
Multiplication 1	Ordering improper fractions & mixed #'s
Division .5	Arithmetic word problems 2
Division 1	Percent word problems 1
Multiplying and dividing negative numbers	Discount tax & tip word problems
Simplifying fractions	
Comparing fractions 1	
Comparing fractions 2	
Ordering fractions	
Negative number word problems	
Arithmetic word problems 1	
Week 3:	**Week 4:**
Decimals on the number line 1	Converting mixed numbers
Decimals on the number line 2	Adding and subtracting mixed numbers
Understanding moving the decimals	Percent word problems 2
Understanding decimal place value	Markup and commission word problems
Adding decimals	Average word problems
Adding decimals 2	
Subtracting decimals	
Multiplying decimals	
Dividing decimals 1	
Dividing decimals 2	
Rounding whole numbers	
Converting decimals to percent	
Converting percent to decimals	
Converting decimals to fractions 1 (not 2	
Add/subtract mixed #'s 0.5	

Scavenger Hunt & Scenarios Notes:

New Stuff Notes:

IMPLEMENTATION

QUESTIONNAIRE

&

CASE STUDIES

PLAN YOUR IMPLEMENTATION

❑ Go to khanacademy.org/r/coachquiz
❑ Complete the questionnaire

Which implementation model did the survey recommend for you?

_____

Read the description of this model.

Do you think this model would work for your classroom? Discuss with a partner. Why or why not?

_____

_____

Pro tip: For more information, search for the following on KA:
- *Implementation goals*
- *Classroom case studies*

CASE STUDY #1: Happy Hills High School

Mrs. Harlow teaches 9th grade Algebra at Happy Hills. The middle schools that feed into Happy Hills range in quality, however, and Mrs. Harlow often ends up teaching arithmetic while her advanced students get bored and disengage.

Last year, Mrs. Harlow teamed up with the computer lab teacher, Mr. Hyde, to use Khan Academy with all incoming 9th grade students. First, students who were identified as struggling in math had to attend a 6- week summer school in which all students brushed up on basic math. After reviewing all of the missions and looking at the test scores of her summer school students, she decided to use the 6th grade mission as her summer school curriculum. She knew that students would be able to feel successful in this mission—but that there would be many gaps that she'd find as well.

On the first day of summer school, Mrs. Harlow and Mr. Hyde explained to students that their goal would be to complete their 6th grade mission. Each week they would focus small group instruction on a different topic within the mission, although students could move faster if they wanted to. Students were expected to get "practiced" in 10 skills on KA every week. If students completed their 10 skills by Thursday, they didn't have to come to school on Friday. During summer school, Mrs. Harlow would give mini-lessons to small groups based on who was struggling, while Mr. Hyde helped to manage the rest of the large class.

Mrs. Harlow teaches a traditional math class during the school year, and she uses the Algebra mission alongside her curriculum. She finds the skills that align with her lesson by using KA's common core map, and she makes coach recommendations every week. Her students go to a computer lab 4 days a week and work on these recommendations, although students who want to work ahead or need extra time to remediate can do so.

Mrs. Harlow uses a point system to grade her students. When students complete her recommendation, they get 1 point. If they master those same skills in a 2 week timeframe, they'll get an additional 2 points for each skill. This motivates students to continue reviewing and retaining skills with Mastery Challenges.

When students go to Mr. Hyde's computer lab to practice their skills as "homework" for their traditional math class, Mr. Hyde pulls small groups and does targeted intervention with students because he shares all data with Mrs. Harlow. Mrs. Harlow and Mr. Hyde meet weekly to talk about which students needed more attention while in the computer lab, and which students needed to be challenged even further. By working together and sharing data, Mrs. Harlow and Mr. Hyde became a strong team.

> What is the purpose of using Khan Academy for Mrs. Harlow and Mr. Hyde?
>
> What are the main strategies they use to fulfill these purposes?

CASE STUDY #2: Magnetic Meadows Middle School

Mr. Mason teaches 8th grade math and science. His students are learning a mix of 8th grade content and Algebra because they're on an accelerated track, but at the end of the year they will take the regular 8th grade standardized test.

Mr. Mason shares a class set of iPads with another math teacher, and he uses KA as part of his math curriculum. He divides his students into 2 groups and every week, his class takes turns spending 2 days on KA and 2 days doing collaborative problem-solving in a large group. The last day of each week is intentionally unscheduled so that Mr. Mason can have students work on whatever it is that they need most--or some that means more time on KA, for others it means being in a lesson with Mr. Mason.

When Mr. Mason's students are working on KA, they are all working quietly and independently--this is important because the other half of the class is working collaboratively in the same room and need to hear each other. Depending on the data, Mr. Mason will sometimes do a mini-lesson with students who are on KA while the other half of his class is working in a group. Students who are working on KA can sit close to other students who are working on similar skills, this way they can peer tutor each other easily and quietly. All students start by working through the 8th grade mission. This not only solidifies the foundations needed for algebra but also helps students prepare for the end-of-year standardized test. Students must complete 50% of the 8th grade mission by winter break and 100% before state testing. When they finish, they move on to the algebra mission. Students keep notebooks, which they use for scratch work and notes.

Every day Mr. Mason looks at his data to make sure students are progressing. At the end of each week, Mr. Mason looks at his Activity report, which tells him the total amount of time each student has spent on KA. He requires students to spend at least 2 hours on KA a week-- this plays a big role in grades. Since Mr. Mason allows his students to go at their own pace, he encounters students who fly through the material while others seem to crawl. Mr. Mason keeps his advanced learners engaged by having them do computer programming challenges on KA. Struggling students who need extra time often stay after school, and Mr. Mason also encourages them to use KA at home.

Throughout the school year, Mr. Mason does big projects that can take 1-2 weeks at a time. These projects often weave together science and math, such as building a rocket and graphing its projectile arc. At the start of each project, Mr. Mason gives a quick diagnostic that consists of all prerequisite skills needed in order to understand how to do the project. Students that have gaps in the diagnostic are then required to do aligned skills in KA before starting the project--this sets them up for success and enables them to work confidently in groups.

What is the purpose of using Khan Academy for Mr. Mason?

What are the main strategies they use to fulfill these purposes?

CASE STUDY #3: Eastern Elderberry Elementary School

Ms. Eloise teaches 4th grade to a classroom of 28 students. In her classroom she has 8 computers, and she typically uses them in station rotations so that all of her students get a chance to use them.

The 4 stations that Ms. Eloise sets up are…

Station 1 - Independent practice using a worksheet
Students sit at desks and complete a worksheet that is aligned to the Common Core standards being focused on that week.

Station 2 - Collaborative problem-solving

Students get in groups of 2-3 and solve multi-step word problems that are often focused on math in real life situations.

Station 3 - Khan Academy

Ms. Eloise has students work through the 4th grade mission. Each week, she recommends one set of skills to her lower students, another to her average students, and a third to her advanced students. Each set is at a different level, so students can work on skills that may be more remedial or advanced depending on what the student is ready for. Students keep a notebook to keep track of the work they're doing in KA.

Station 4 - Creating a lesson

Students work in pairs to create their own lesson and questions for a skill that they've mastered in the past. Not only does this help students solidify their understanding of a concept--it also helps Ms. Eloise with extra practice questions and excellent peer tutors!

Students spend about a half hour in each station, and typically they go to 2 stations each day. This means that students spend about an hour on Khan Academy each week. While students are in stations, Ms. Eloise sits at a special table and calls students up to provide 1-1 coaching. She looks at the data to target students who are struggling. She also uses this time to routinely check in with students about their overall progress and motivation levels. She often has students look at their own data to analyze what they spent the most time doing over the past week. This gives them a chance to reflect and become self-aware with their own data. Notes from these check-ins also go into the student's KA notebook.

After seeing how her students react to KA, Ms. Eloise realized that she really would like to have more computers to give her students more time and access to KA. She carefully documents her students' growing enthusiasm and progress in math and gives a presentation to her principal with a request for more computers. Next year, Ms. Eloise hopes to have a full set of computers so that students can spend at least 2 hours on KA each week.

> What is the purpose of using Khan Academy for Ms. Eloise?
>
> What are the main strategies she uses to fulfill these purposes?

Best Practices Notes:

SETTING GOALS

TEACHER GOALS

What are your overarching goals as you develop this school year?

Make sure you're on track to reaching your big goals by setting milestones along the way. Use the next page for inspiration.

Milestone #1
Goal(s) accomplished by __/__/__

I will have been successful if…

Milestone #2
Goal(s) accomplished by __/__/__

I will have been successful if…

Milestone #3
Goals(s) accomplished by __/__/__

I will have been successful if…

Milestone #4
Goal(s) accomplished by __/__/__

I will have been successful if…

SETTING MILESTONES

Every implementation evolves. As you use Khan Academy with your students, you'll become more comfortable with our tools and discover more effective ways to use them.

- Complete the mission you're asking your students to complete
- Create a plan to integrate KA into your curriculum (ex. as in-class practice, as homework, as independent self-paced math time, etc.)
- Students are motivated and invested in completing a mission during

  the school year
- 100% of students have Khan Academy accounts and can log in by a certain date (e.g., end of the first day/week)
- Technology systems and procedures are running smoothly (ex. students are logged into KA and working in under 2 min; students have KA journals set up)
- Students are in a routine of regularly using Khan Academy on a weekly basis
- Teacher is routinely looking at coach reports
- Teacher is doing targeted, small-group instruction based on data
- Students are peer tutoring
- Students are doing projects alongside Khan Academy
- There are many more! What else do you want to accomplish?

STUDENT GOALS

- See the next page for using badges to set student goals
- Create a class-wide goal; ex. everyone will master at least 80% of their mission
- Throughout the school year, set personal goals with students as you deem necessary

Class wide goal

By the end of the 1st Semester, my students will be able to…

By the end of the 2nd Semester, my students will be able to…

Motivation Strategy
Search Khan Academy for "incentives and motivation" to get some ideas!

BADGE RECOMMENDATIONS

Badges can be a great way to incentivize students to work towards the same set of goals. Choose a couple badges from the recommendations below to invest your entire class in, and create a culture of support and celebration whenever someone earns one.

Badges for Missions

Invest your students in completing their mission and earning their mission completion badge! You can set milestones along the way with topic badges within each mission. Kristin, a 5th grade teacher in Idaho, did exactly this by posting topic badge posters around her room. When students earned that badge, they got to sign the poster. If you want to create your own posters & certificates, you can download some on our site by searching "incentives and motivation."

Badges regardless of missions

If your students are working across different missions, you can use badges that celebrate mastery of skills instead. Examples include:

- Hard at Work Moon Badge – Mastery at 25 skills
- Magellan Sun Badge – Mastery at 100 skills
- Sally Ride Sun Badge – Mastery at 150 skills
- Copernicus Sun Badge – Mastery at 200 skills

There are also set of badges that celebrate behaviors, such as the **Sticktoitiveness** moon badge (answer a problem correctly after having some trouble with many problems and sticking with the skill) and the **Atomic Clockwork** moon badge (watch part of any video or work on any skill each day for 30 consecutive days).

Note: Currently, there is not an easy way to see which students have earned certain badges from a class- view. We encourage you to focus on 1-2 badges and have students tell you when they earn it!

PLANNING YOUR

FIRST DAY

GET STARTED IN YOUR CLASSROOM

If you're ready to start, check out our suggestions
for introducing KA to your students.

❑ Find "Plan for day one" using the search bar
(at the top of every page).

❑ Explore Coach and Classroom Resources
(www.khanacademy.org/coach-res) or use search
to find answers to your questions.

STILL HAVE QUESTIONS?

The articles below have answers!
Search for the italic titles to access them.

1.   What technology do I need?
     ➢ *Get your technology ready*

2.   What if I teach a class that doesn't align with a mission?
     ➢ *Create and implement a playlist*

3.   What is a mastery challenge?
     ➢ *Glossary of KA terms*

4.   What else should I know about missions?
     ➢ *Choose a mission for your class*

5.   How can I find exercises aligned to specific Common
     Core standards?
     ➢ *Common Core map*

You'll also find a Help Center link at the
bottom of each page.

START OF YEAR – CLASSROOM CULTURE

We've seen the best practices below in the most successful KA classrooms. Consider how you might be able to include similar lessons in your own class.

RULES FOR USING TECHNOLOGY

Each school has different rules and procedures concerning technology. We encourage teachers to start off the year explaining these rules and procedures and getting any appropriate forms signed. Some teachers have also used this time as an opportunity to discuss the responsibilities associated with having email accounts and the difference between a work or school email account and a personal email account.

INTRODUCING KHAN ACADEMY

While it might be tempting to plan how students learn about the site, we encourage you to consider letting students explore Khan Academy individually when they first get on the site. This enables them to see different parts of the site with the element of discovery. Then, debrief as a class to discuss what everyone found. (You may also want to have a backup plan in case technology fails on the first day.)

Keep in mind that your attitude towards Khan Academy will be projected onto your students. If you view it as helpful, they will likely frame it as a helpful tool. If it's seen as a fun activity, likely that enthusiasm will rub off too.

You can set the stage for your classroom in setting a tone of respect when using Khan Academy and technology. It is important for students to understand that everyone learns differently and has different "Swiss cheese holes." There is no need to feel embarrassed about filling in these gaps. Instead, the emphasis should be placed on meeting goals, regardless of what those specific goals may be.

DISCUSSING KHAN ACADEMY

Some teachers encourage students to share their thoughts on how learning with Khan Academy will be different from their previous math classes. We've seen some teachers begin this conversation with a formal presentation, while others have been informal.

During this conversation, teachers can correct any misconceptions, identify potential opportunities and challenges, and prompt students to think creatively. Consider covering the following questions:
• Think about your previous math classes. How might your experience with Khan Academy be similar to or different from another student in those math classes?
• What are some advantages to using Khan Academy?
• What are some challenges we might face in using Khan Academy?
• How can we meet those challenges?

This brainstorm could segue into a discussion of class contracts.

START OF YEAR – CLASSROOM CULTURE (continued)

CONTRACTS
Starting the year with an explicit class contract helps establish norms and set expectations. To cultivate values like individual improvement, hard work, and camaraderie, consider including the following in your contract:
- We all learn concepts at different paces
- We take responsibility for our own learning, and we try our best
- We help each other out. When someone is struggling with a concept we already know, we'll help him or her understand it

USING A JOURNAL / NOTEBOOK
Some teachers might find it useful to have a consistent source of documentation for each student, whether it's a journal, notebook, binder, etc. This journal can be used to keep track of which videos students have watched and which exercises have been worked on. It can also be a space for scratch work, for keeping track of goals and progress, and for students to reflect on their learning: what questions they have, what new vocabulary terms they've learned, etc.

HOW TO BE AN EXCELLENT PEER TUTOR
Social interaction is a key component of using Khan Academy, and we expect and hope that students will learn from each other. For many classrooms, you'll need to explicitly teach students how to be good tutors to their peers. One way to start is to help students brainstorm the characteristics they would like in an excellent tutor (e.g. they don't just tell me the answer, they ask me questions that guide me to the answer, they are encouraging and positive, etc.).

HOW TO WATCH A KA VIDEO
In order to take full advantage of Khan Academy videos, it might be necessary to explicitly teach students how to watch a video. This includes taking notes and stopping and replaying parts that are not clear. Teachers can model active listening by watching a video on a higher concept so that students can observe the learning and note-taking process.

HOW TO SET YOUR OWN GOALS
Although the specifics will vary for each class, individual goal-setting is a hallmark of using Khan Academy. For this reason, we suggest teaching students how to read their own Progress Reports and set reasonable goals. The goal is to encourage students to be self-motivated and to empower them to discuss their own goals and progress with you.

SAMPLE PERMISSION SLIP

Dear parent or guardian,

This year, we'll be using Khan Academy in class to personalize learning for all students!

Khan Academy is a free online resource that allows students to learn anytime, anywhere, with material that is uniquely appropriate for them. Students can explore new topics and practice their math skills by using interactive exercises, videos, and tutorials. As students learn, their activity feeds into reports that show important information such as strengths and weaknesses in a particular concept. By using Khan Academy, I'll be able to provide a more personalized learning experience for your child.

If you approve of your child participating in this program, please provide the information below.

Student name: _____

Does your student already have a Khan Academy account?
❑ **YES**
❑ **NO**

Student username: _____
(Letters only, no spaces, ex. JSmith; if your child already has a Khan Academy account, please provide the child's existing username above)

Student password: _____
(Minimum 5 characters, different from username; if your child already has a Khan Academy account, then you do NOT have to write down the password as long as your child knows it.)

Student birthdate: _____

Parent/guardian email: _____
(An email will be sent asking you to verify your child's account, but you will not receive any other emails without your permission.)

If you want to see how your child is learning on Khan Academy, I encourage you to create your own Khan Academy account as well. You'll be able to see what your child is working on, and there's plenty of material on the site for you to learn anything you want, too. Simply go to www.khanacademy.org and click Sign Up to get your own account.

Check out the links below to learn more:

Khan Academy: www.khanacademy.org

Terms of Service: www.khanacademy.org/about/tos

Privacy Policy: www.khanacademy.org/about/privacyFpolicy

Please sign below to give your child permission to use Khan Academy in my class.

Parent Signature: _____ **Date:** _____

Sincerely,

[Teacher Name]

START OF YEAR – LOGISTICS

As you prepare to implement Khan Academy, you'll want to think about when and were students will use the program.

SCHEDULE
Decide when and where will your students will use Khan Academy (e.g., two times per week for 45 min in the computer lab)

CLASSROOM LAYOUT
Imagine the class where students will be using Khan Academy. What does it look like?
- Where are the outlets? Can students easily charge their devices?
- If you are using a mobile cart full of devices, where will it go?
- Where will the students sit? Will they be allowed to sit in unconventional places (such as on the floor, in a beanbag, etc.)?
- Can you easily get to each student?
- Will you section off part of the room for teacher seminars, peer tutoring, non-KA work, etc.?
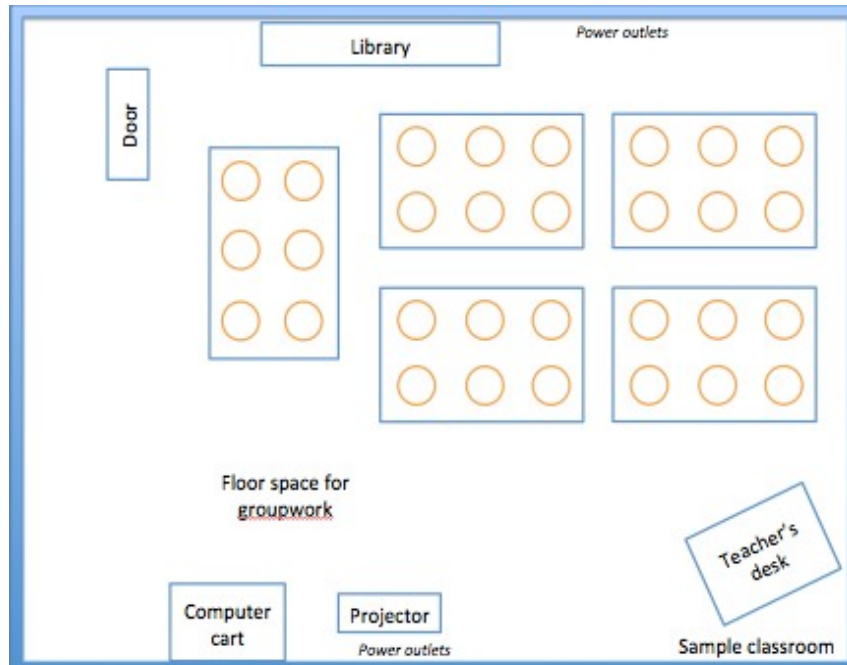
PLANNING CLASS TIME
How will you structure your first day of class?

BE SURE TO COVER

- ❑ Introducing Khan Academy by discussing how it will benefit students in math
- ❑ Go over tech rules or contracts
- ❑ Establish systems and procedures around tech
- ❑ Make log-in instructions as clear as possible (e.g., write instructions on the board, have students write down usernames and passwords)
- ❑ Ask for volunteers to help manage the class on the first day

SAMPLE FIRST DAY AGENDA (90 minute class)	
9:00-9:15	Class starts, discuss how technology will be integrated into math class this year
9:15-9:30	Pass out Khan Academy notebooks, go over tech rules as a class, discuss procedures for getting a laptop from the mobile cart
9:30-9:40	Pass out laptops, pass out instructions for students with usernames, passwords, and coach ids
9:40-10:00	Have all students log into Khan Academy and add the appropriate coaches (get 2 parent volunteers), when done, make sure they have stored their username and password somewhere safe
10-10:15	Allow students to explore the site on their own
10:15-10:20	Quick debrief: what have we learned about Khan Academy so far?
10:20-10:30	Go over procedures for putting away laptops and charging them, put away laptops, pack up and get ready for next class

> # Use the back of this page to draft your first day agenda

PLANNING CLASSTIME DURINGTHE SCHOOLYEAR

What will a day look like next semester?

SUGGESTIONS

- ❑ Intentionally build in time to respond to data with mini-lessons
- ❑ Include time for students to receive on-demand help from you by creating a tutor bar
- ❑ Start / end each day with independent time working through Mastery Challenges
- ❑ Energize the class with a Rocket Run, where half the class competes against the other using the Real Time report projected onto a screen

| SAMPLE AGENDA (60 minute class) |
| --- |
| **9:00-9:15** **Mastery Challenges**
Students settle down with their computers and work independently on Mastery Challenges |
| **9:15-9:30** **Mini-lesson**
Based on the data, pull a small group of students that need practice or are struggling with a specific skill. The rest of the class can focus on working through a playlist / recommendations. |
| **9:30-9:40** **Tutor Bar**
During this time, sit at a designated table and allow students to come to you with specific questions they might have. |
| **9:40-9:55** **Check-ins for 2 students**
Each week you focus on 10 different students. During this time, you review their KA progress with them, congratulate them on their successes, and discuss upcoming goals. |
| **9:55-10:00** **Rocket Runs!**
Each half of the class gets 90 seconds to get as many energy points as they can. |

Use the back of this page to draft the agenda of a typical day during your school year

OTHER RESOURCES

REPORTS CHEAT SHEET

To access coach reports, go to khanacademy.org/coach and use the menu at the top of the screen.
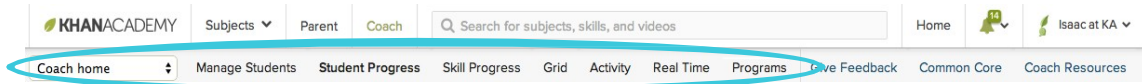
Student Progress shows an overall picture of student progress through a mission. It also gives detailed information such as which students are struggling, which skills they're struggling in, and the amount of time students are working.
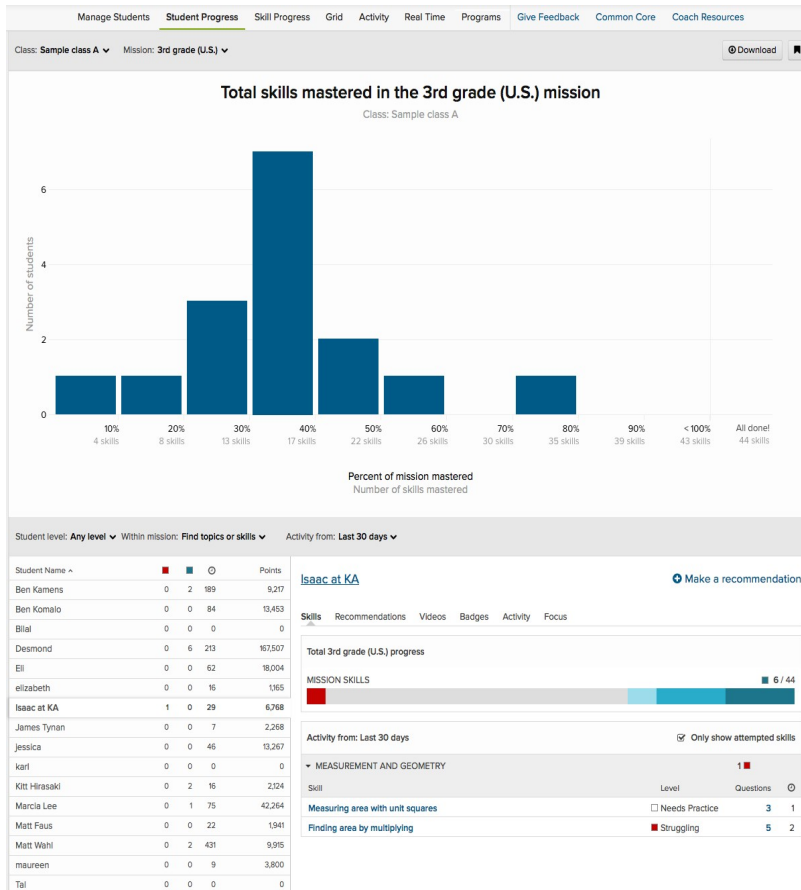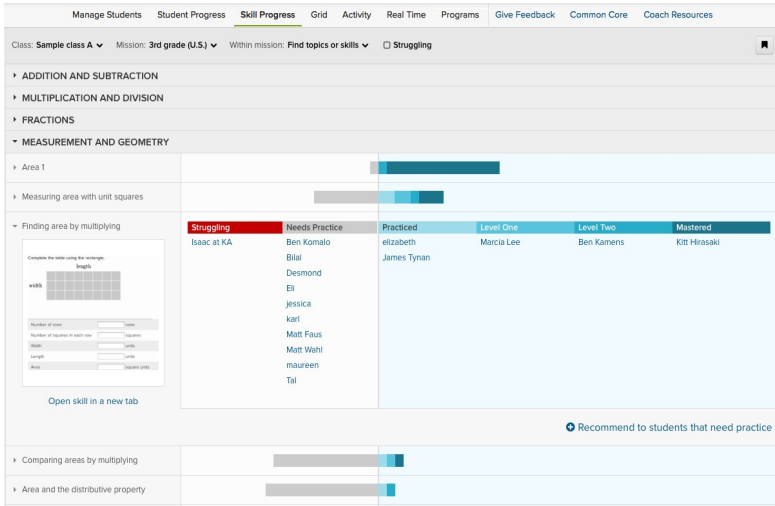

Use it to…

- Assess your class's overall progress on a mission
- Identify students who've struggled with skills recently
- Create a leaderboard of who has mastered the most skills in the mission
- See who has spent the most time in the last week
- Recommend skills to individual students

REPORTS CHEAT SHEET

Skill Progress shows students' performance according to specific skills.

Use it to…

- Identify skills that many students are struggling with and plan small- group lessons accordingly
- Assign peer tutors
- Recommend skills to groups of students

The *Activity* report shows how students are spending their time.
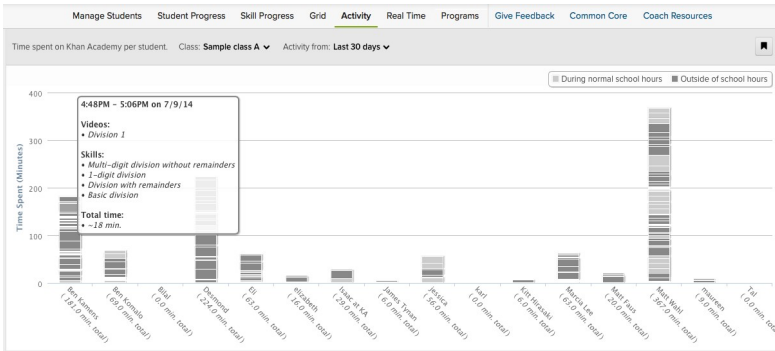
Use it to…

- Ensure that students are using their Khan Academy time productively
- See which students are working on Khan Academy during class time

> *Pro tip: For more information on reports, search KA for "monitoring student progress" and check out the related link called "Overview of coach reports."*

Tech: Is everything set up to work?

This checklist is handy for you and the IT folks at your school.

BANDWIDTH AND CONNECTIVITY

Check that your school's bandwidth can handle all students on Khan Academy at a given time.
We recommend ~1.5 Mbps per machine viewing standard definition video. It's unlikely all students will watch streaming videos at the same time (skills practice is significantly less bandwidth), but ~1.5Mbps per student is a very safe bet.

Confirm that wifi access points are close enough.
Ensure that all students can use wifi simultaneously. To be safe, have one router in each room that will be using Khan Academy.

PRIVACY & FILTERS

Check if your school uses filters that block YouTube.
If it does, an easy solution is to sign up for YouTube for Schools. Find out more info about this by going to www.youtube.com/schools

DEVICES & BROWSERS

Try using Khan Academy on the devices to ensure that filters and browsers are set-up properly.

Install the latest versions of browsers. Older versions do not support the latest technologies and encounter more bugs. We recommend faster browsers like Chrome, Firefox, Safari and IE10.

IT SUPPORT

Provide basic troubleshooting strategies and procedures on taking care of technology (ex. rebooting computers) and give IT contact info to teachers.

ACCOUNTS

Figure out any email issues that may relate to creating student accounts. If emails are not used, create student accounts ahead of time and record usernames and passwords.