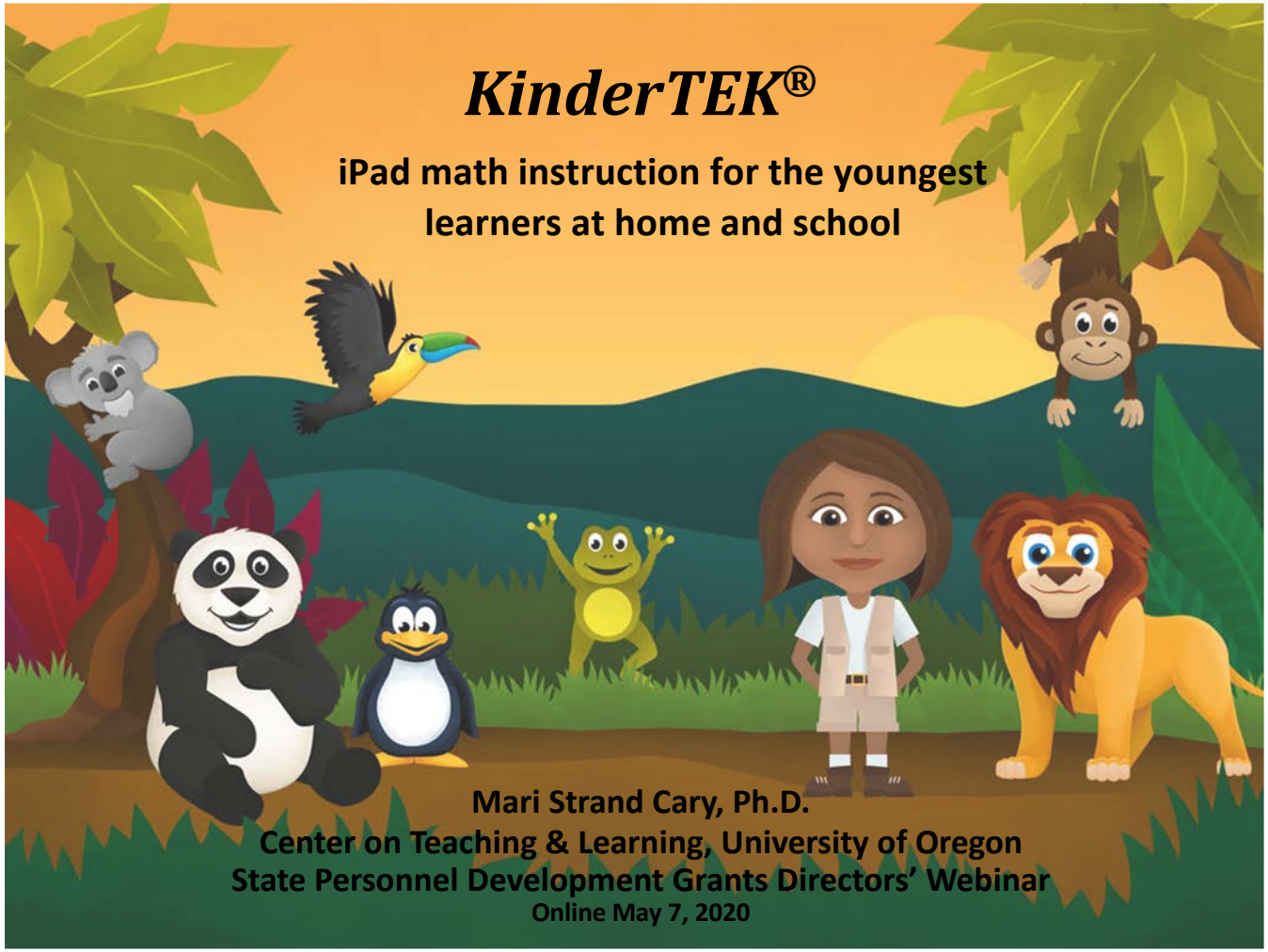

CTL Center on Teaching & Learning

UNIVERSITY OF OREGON

What IS KinderTEK?

A flexible and customizable system of iPad-based foundational math instruction to suit a wide variety of needs and learning contexts.

CTL Center on Teaching & Learning

Check it out!
https://youtu.be/vd5pDWyqP6E

For what purposes can KinderTEK be used?

Use case
Intervention for early elementary students struggling with kindergarten math content
Kindergarten math **supplement** (even “homework”)
Kindergarten **readiness tool** for preschoolers
Positive math-based screen time for kids at after-school programs, daycares, or home

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Why KinderTEK?

- Students come to school with vastly different backgrounds in mathematics knowledge
- Early mathematics skill is highly predictive of later mathematics achievement
- Unless we identify at-risk students and intervene early, serious problems are likely to develop and remain relatively intractable over time
- What we know about mathematics lags far behind what we know about reading
- Significant interest in improving the mathematics (and STEM) performance of the nation's students

(Citations available upon request)

Student need often exceeds resources and capacity

Students all learning?

Small group work, one-on-on instruction, and DBDM!

Federally-funded development of KinderTEK

Plan

1. Tech partnership
2. User need(s)
3. Critical content / sound instructional design principles
4. Scope/sequence and presentation

Iteratively Develop

1. Idea / discussion
2. Script / Mockup
3. In-house review
4. User review/test

(repeat 1-4, as needed)

5. Extensive quality assurance

Validate

1. Development studies
2. Feasibility studies
3. Pilot studies
4. **Dissemination/Efficacy studies**

Repeat with next study
(**Tech is never done!**)

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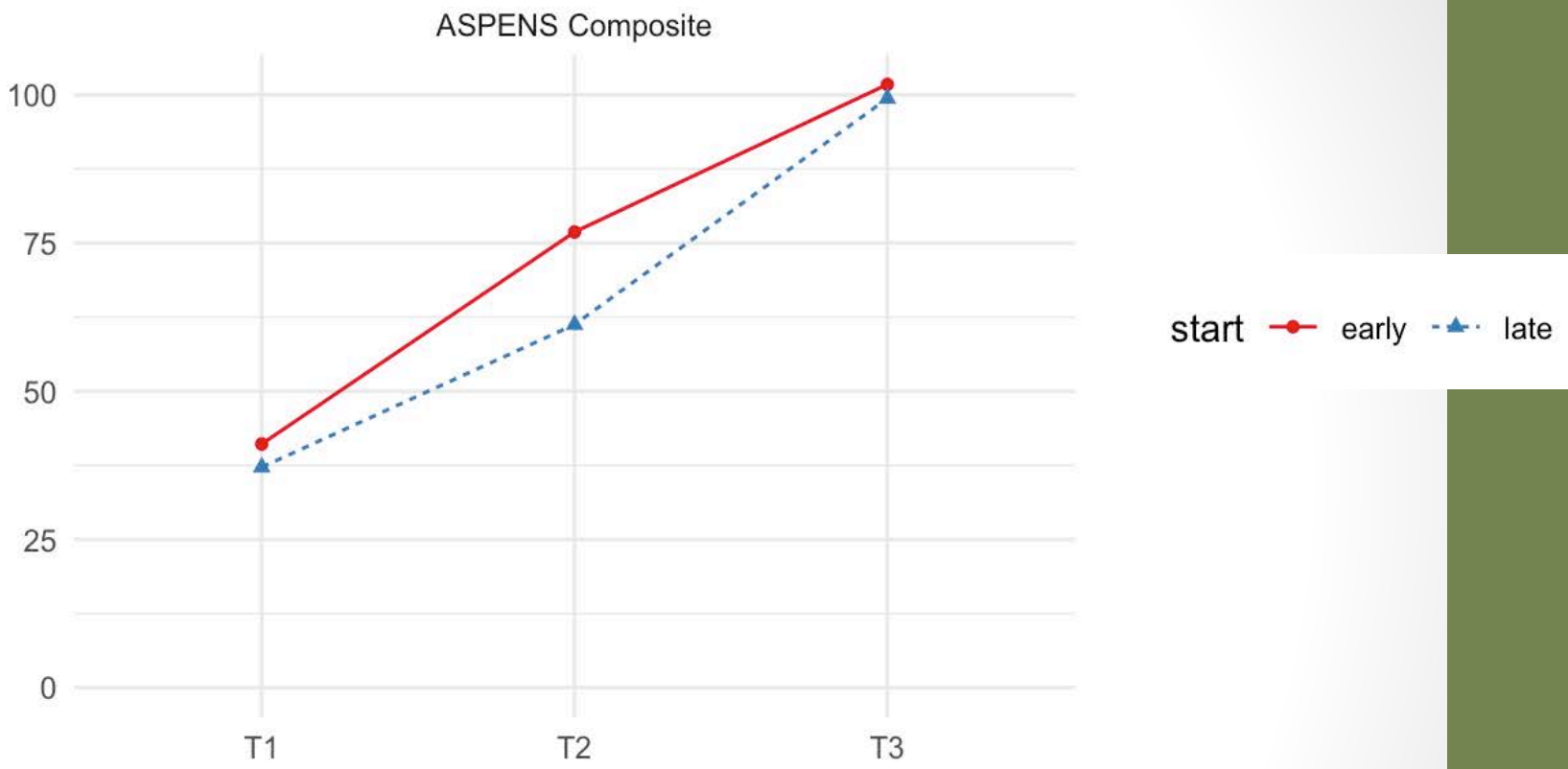

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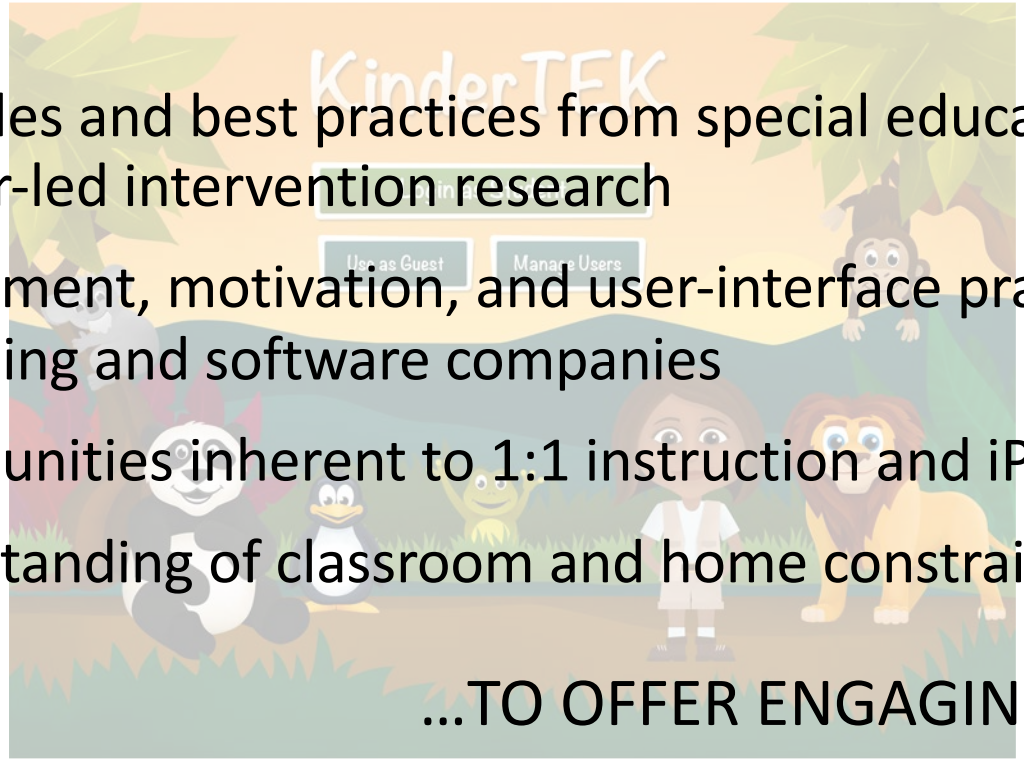
Strand Cary, M., Kennedy, P. Shanley, L., & Clarke, B. (In press). Learning gains from the KinderTEK iPad math program: Does timing of a preventative intervention matter? *Journal of Special Education Technology*.

Interpreting the previous data slide:

- Our efficacy study just got interrupted by COVID. But we do have small-scale results from our development studies. Years ago, for example, we compared students who started KinderTEK earlier in the year to those who used it later in the year. All participants were getting their core math instruction at the same time. Teachers implemented in many ways and some student had very little KinderTEK exposure while others had much exposure. So it was a "messy" study.
- Even with all that noise, we saw that kids who used KinderTEK early on (the red line) made larger gains on a standardized progress monitoring measure (ASPENS) between T1 and T2 than their comparison peers who did not use KinderTEK then (the blue dotted line).
- When those comparison students DID start using KinderTEK, it seemed to have made a difference even late in the year…their line was a lot steeper between T2 and T3.
- For each of the subtests on the ASPENS measure (i.e., magnitude comparison, missing number, number identification) we got a pattern like that shown here for the ASPENS composite score.

How does KinderTEK work?

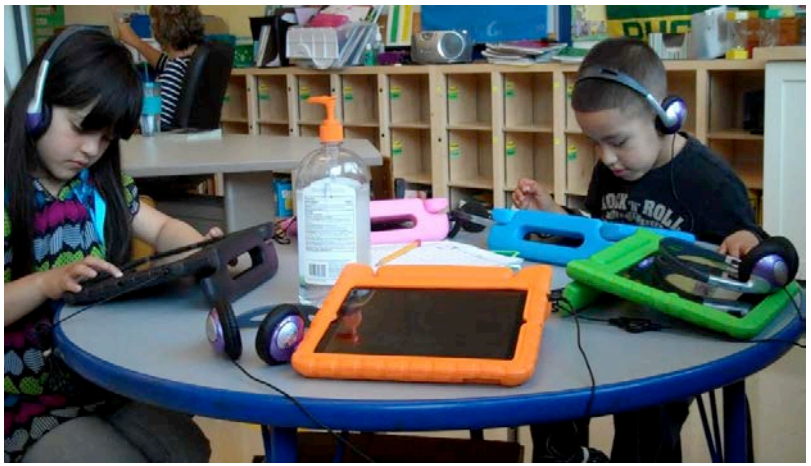
How does KinderTEK work? It blends…



- Principles and best practices from special education & teacher-led intervention research
- Engagement, motivation, and user-interface practices used by gaming and software companies
- Opportunities inherent to 1:1 instruction and iPads
- Understanding of classroom and home constraints

…TO OFFER ENGAGING, CUSTOMIZED, DIFFERENTIATED INSTRUCTION

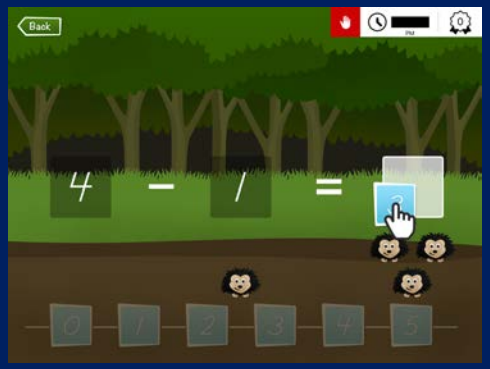
KinderTEK system



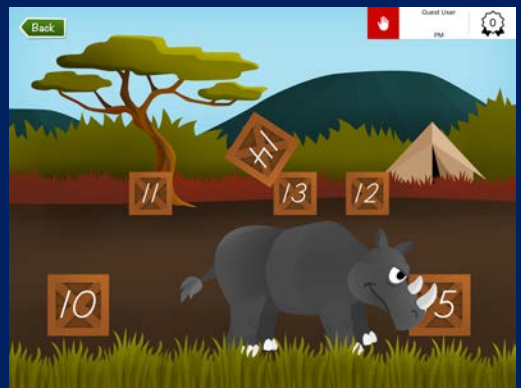
Web-based
Data dashboard (Pro only)

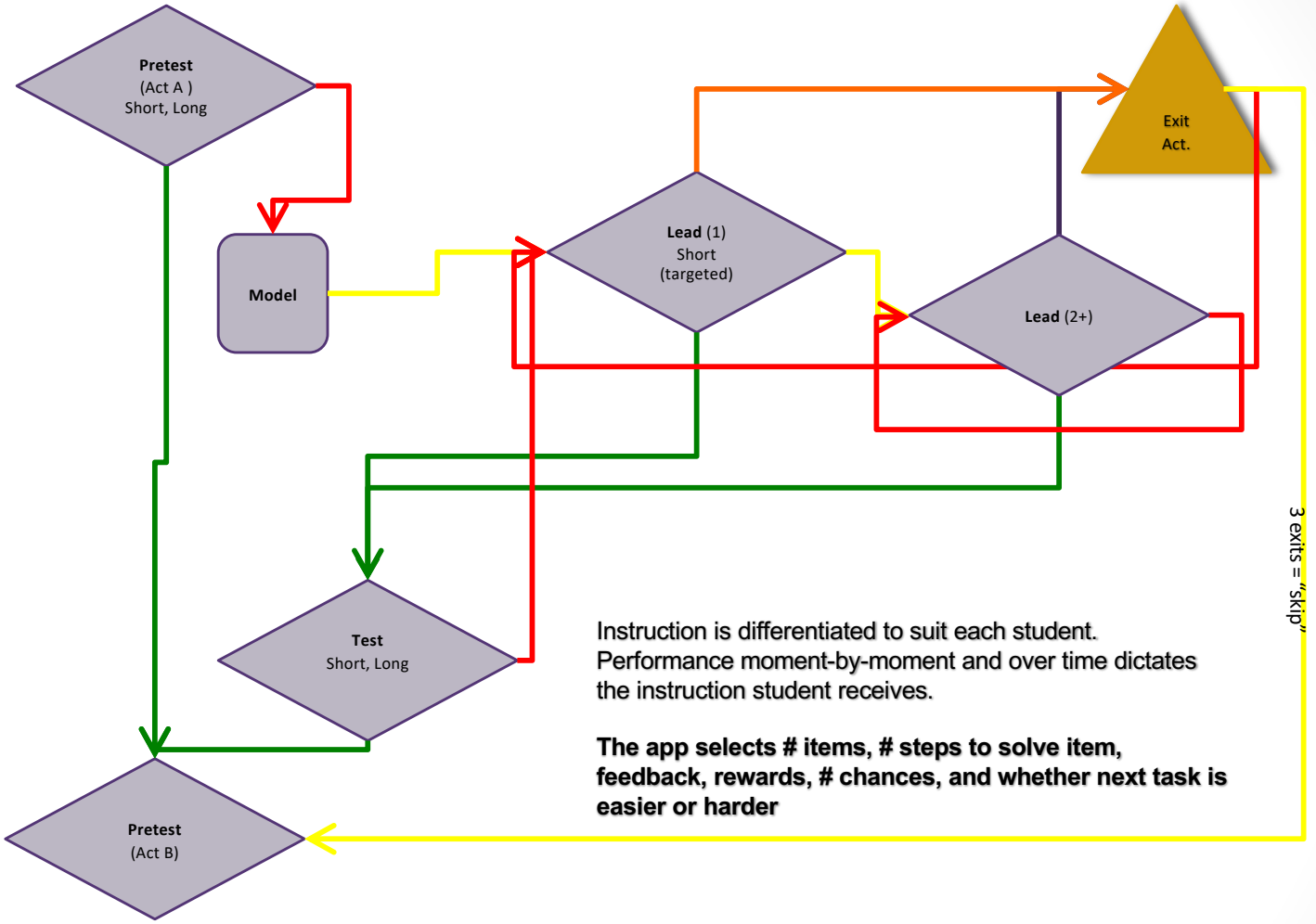
Website
(www.KinderTEK.com)
with training & resources

CTL Cent



- Ease-to-use login and navigation
- Explicit instruction (51 activities)
  - Critical math content
  - Customized supports
  - Model—Lead—Test
  - Visual math models to drive home concepts
  - ADAPTIVE
    - Content, supports, feedback, pacing, etc. depends on student actions and engagement





Instruction is differentiated to suit each student. Performance moment-by-moment and over time dictates the instruction student receives.

The app selects # items, # steps to solve item, feedback, rewards, # chances, and whether next task is easier or harder

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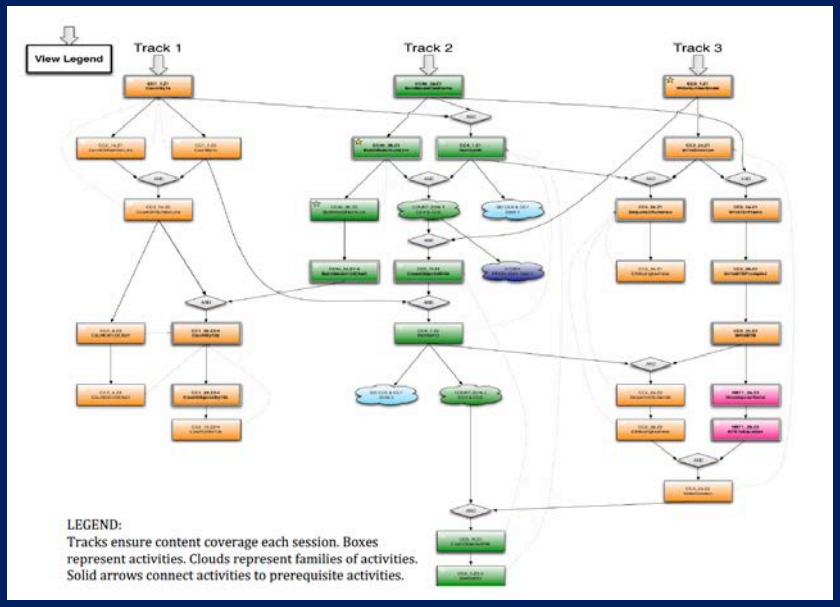
Students choose activities in *exploration* mode (anything goes!)



Sequenced, directed, & *screening* modes use carefully-chosen lesson sequence

"Sequenced" mode is the default…
but other modes might better fit needs

Use case	What mode might be good?
Intervention at school	• *Sequenced* for independently-paced learning • *Directed** to complement class instruction • *Exploration* if all skills already mastered (or perhaps if working with peer or aide)
Supplement at school, home or after-school programs	
Readiness tool anywhere	• *Sequenced* for independently-paced learning • *Exploration* if all skills already mastered
Positive math-based screen time anywhere	• *Sequenced* while still learning • Change to *exploration* when all skills already mastered (or perhaps if working side-by-side with older sibling or adult)

**May need adult assistance if any user-interface elements new-to-child*

How can KinderTEK "look" in different contexts?

Use case	For whom?	How might it look?
Intervention at school	Struggling K-Gr3	• Small-group rotations, pull-out programs, alternative seatwork • Multiple educators can access students (e.g., Gen Ed & SPED)*
Supplement at school, home or after-school programs	On-track or struggling K-Gr1, PreK	• Centers, small-group rotations, free-choice time, alternative seatwork • Multiple educators can access relevant students; parents or care-providers can access just their students*
Readiness tool anywhere	PreK (and into K?!)	• Parents and/or care-providers take on "teacher" role
Positive math-based screen time	PreK-Gr1	• Parents and/or care-providers take on "teacher" role

** Student uses same account for uninterrupted experience across contexts*

Ways teachers reported using KinderTEK in a recent survey

"Early finishers in math time, free choice at centers, some days small groups"

"Used KinderTEK with whole group several times a week and alternated with I-Ready. Allowed me to assess and assist individually"

"I started using it as an intervention with struggling students in a pullout setting. Then it was added to the Kindergarten classrooms for use with all students during free choice = math time."

"3 days a week 1/2 of the class does KinderTEK for 20 minutes, then second 1/2 switches on"

"KinderTEK was a small group rotation for math centers, but the children used it independently."

"In math small groups"

"Students worked on KinderTEK while I pulled small groups"

"It was used during our rest time. [1/2 class at a time]"

"Free choice time"

"As an intervention, then added whole class"

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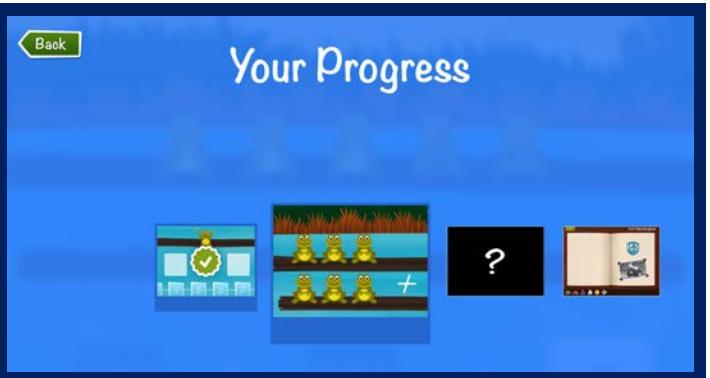
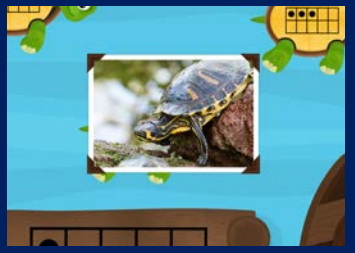
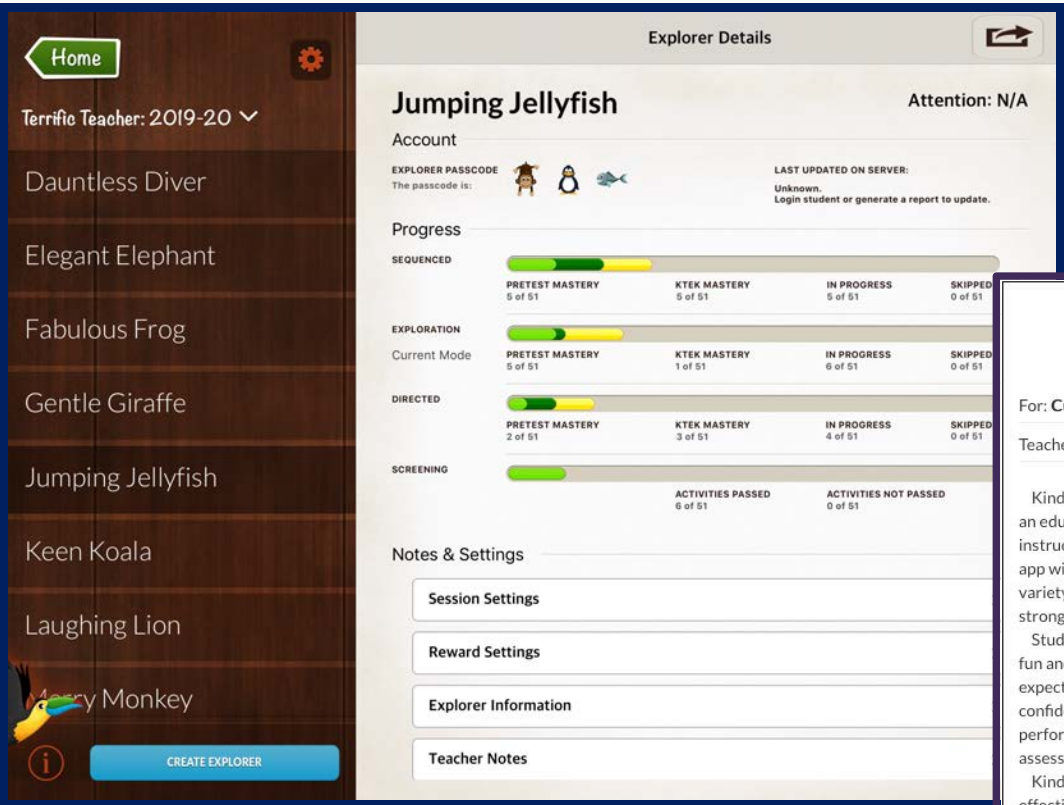
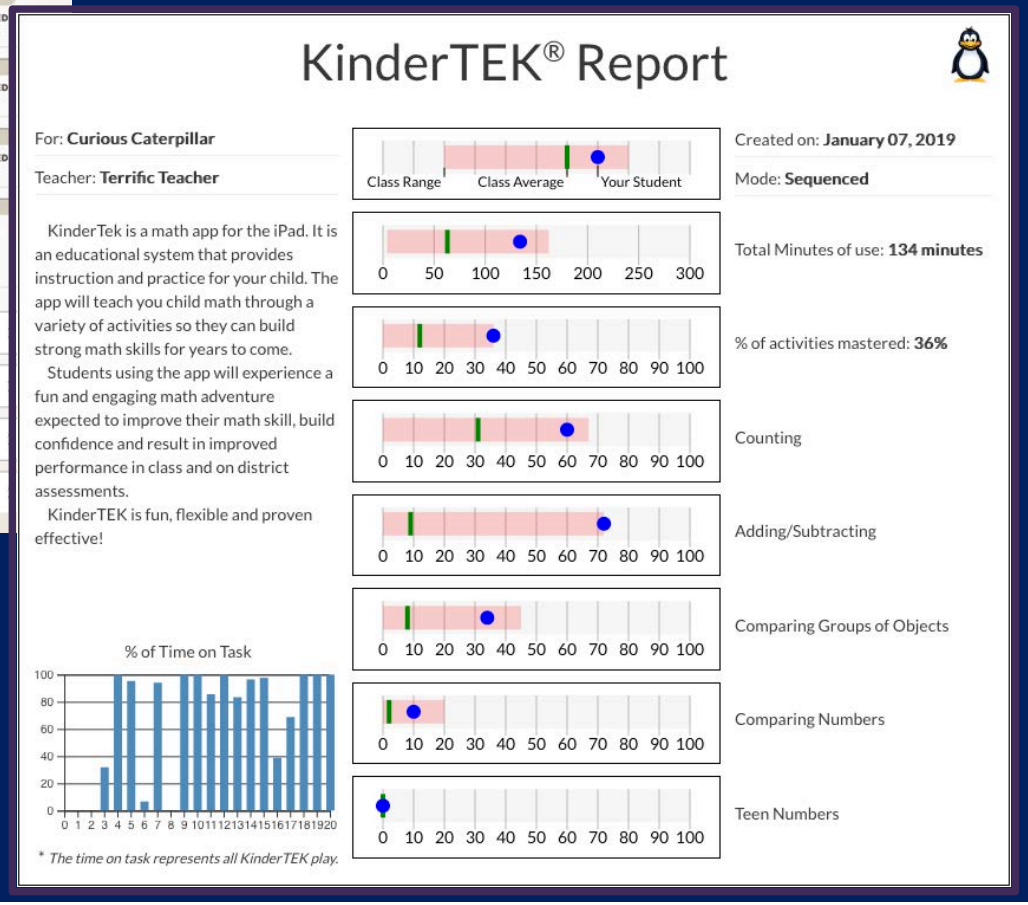
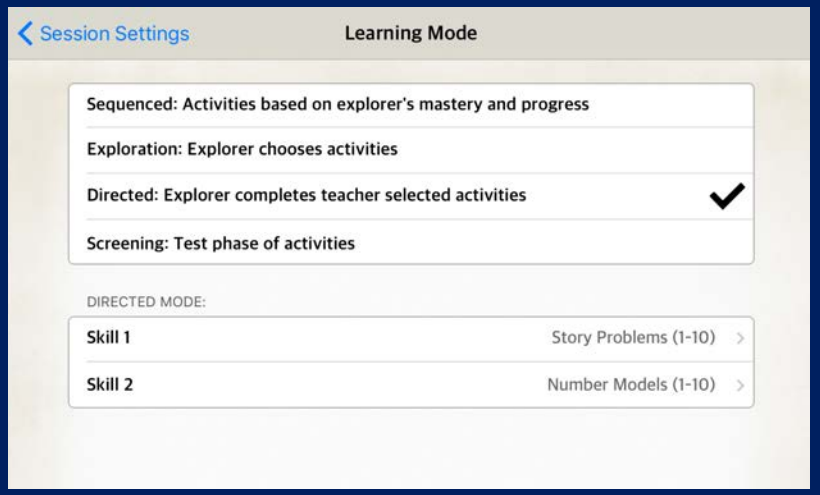
- Self-monitoring
- Rewards & motivation
  - Focused on math, mastery, and perseverance!

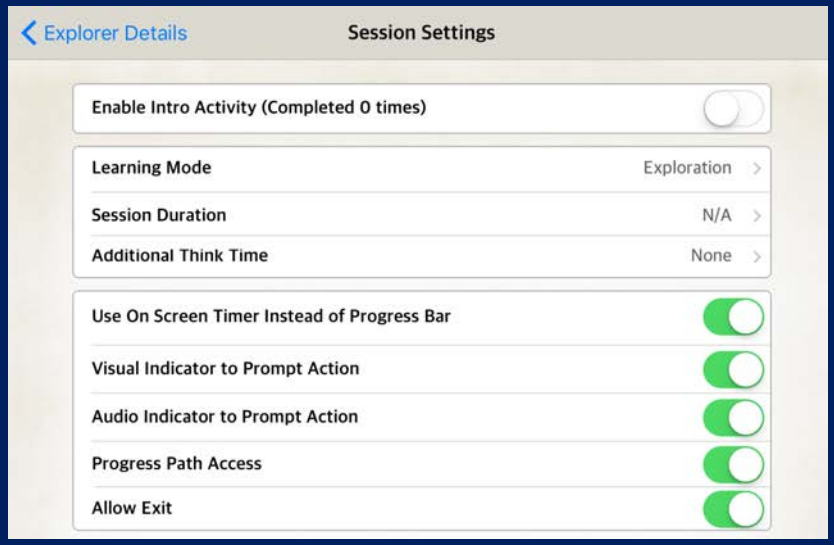


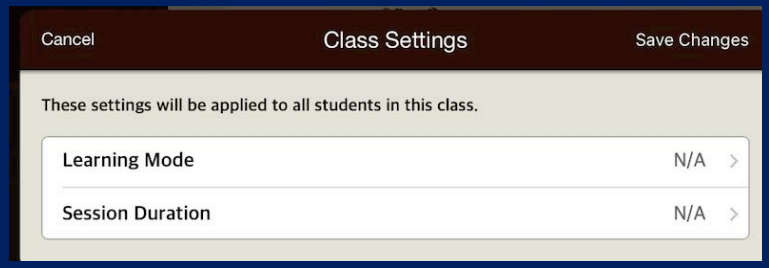



Home
Terrific Teacher: 2019-20
Dauntless Diver
Elegant Elephant
Fabulous Frog
Gentle Giraffe
Jumping Jellyfish
Keen Koala
Laughing Lion
CREATE EXPLORER
Explorer Details
Jumping Jellyfish
Attention: N/A
Account
EXPLORER PASSCODE
The passcode is:
LAST UPDATED ON SERVER:
Unknown.
Login student or generate a report to update.
Progress
SEQUENCED
PRETEST MASTERY 5 of 51
KTEK MASTERY 5 of 51
IN PROGRESS 5 of 51
SKIPPED 0 of 51
EXPLORATION
Current Mode
PRETEST MASTERY 5 of 51
KTEK MASTERY 1 of 51
IN PROGRESS 6 of 51
SKIPPED 0 of 51
DIRECTED
PRETEST MASTERY 2 of 51
KTEK MASTERY 3 of 51
IN PROGRESS 4 of 51
SKIPPED 0 of 51
SCREENING
ACTIVITIES PASSED 6 of 51
ACTIVITIES NOT PASSED 0 of 51
Notes & Settings
Session Settings
Reward Settings
Explorer Information
Teacher Notes


KinderTEK® Report
For: Curious Caterpillar
Teacher: Terrific Teacher
KinderTek is a math app for the iPad. It is an educational system that provides instruction and practice for your child. The app will teach you child math through a variety of activities so they can build strong math skills for years to come.
Students using the app will experience a fun and engaging math adventure expected to improve their math skill, build confidence and result in improved performance in class and on district assessments.
KinderTEK is fun, flexible and proven effective!
% of Time on Task
* The time on task represents all KinderTEK play.
Class Range
Class Average
Your Student
Created on: January 07, 2019
Mode: Sequenced
Total Minutes of use: 134 minutes
% of activities mastered: 36%
Counting
Adding/Subtracting
Comparing Groups of Objects
Comparing Numbers
Teen Numbers







e.g., Shanley, L., Strand Cary, M., Turtura, J., Clarke, B., Pilger, M. & Sutherland, M. (2019). Individualized instructional delivery options: Adapting technology-based interventions for students with attention difficulties. *Journal of Special Education Technology*. Advanced online publication. doi: 10.1177/0162643419852929.

KinderTEK system

App: Math instruction, reporting & management & supports

Available on App Store

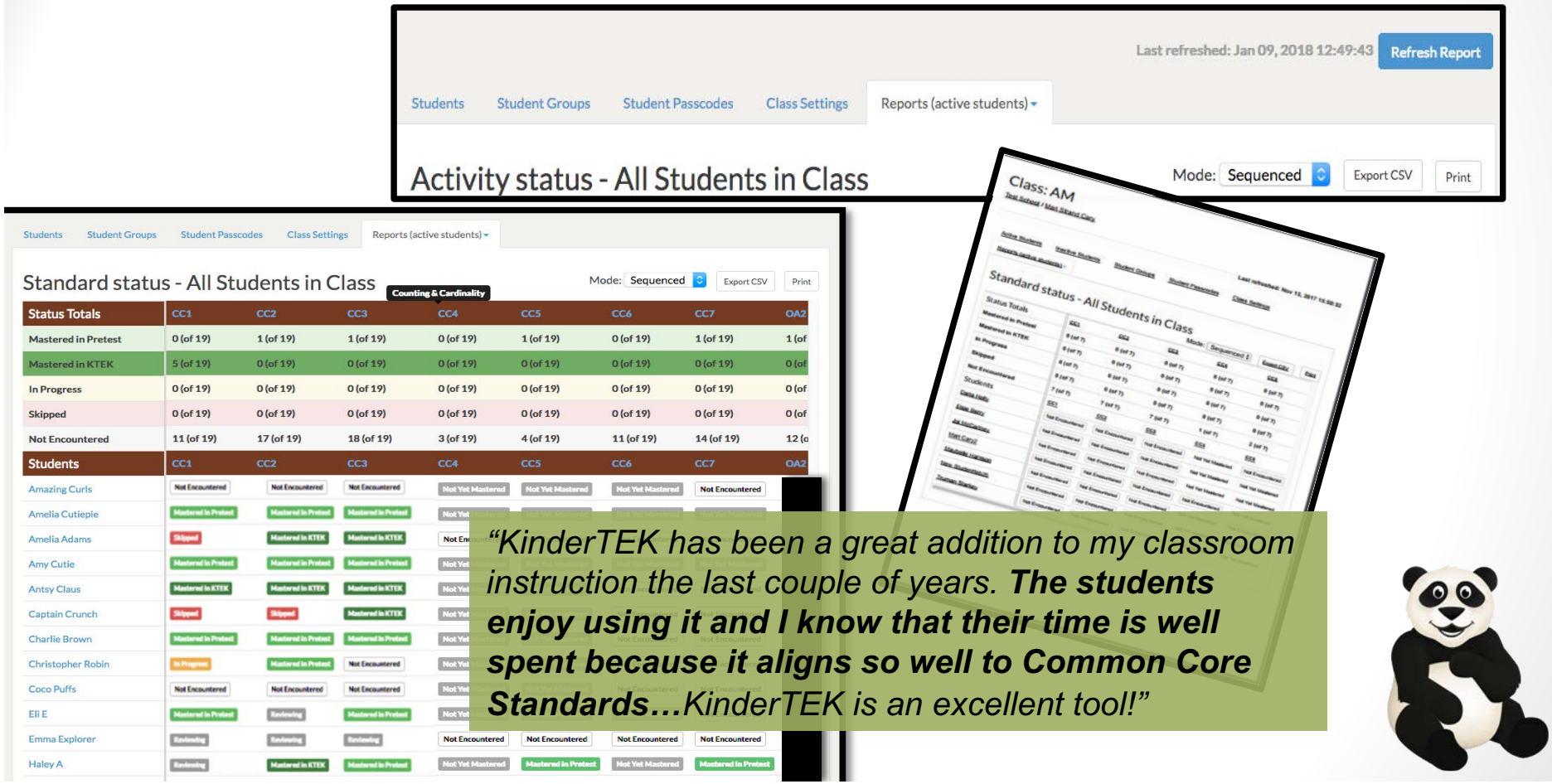
Pro *Basic*

Web-based
Data dashboard (Pro only)

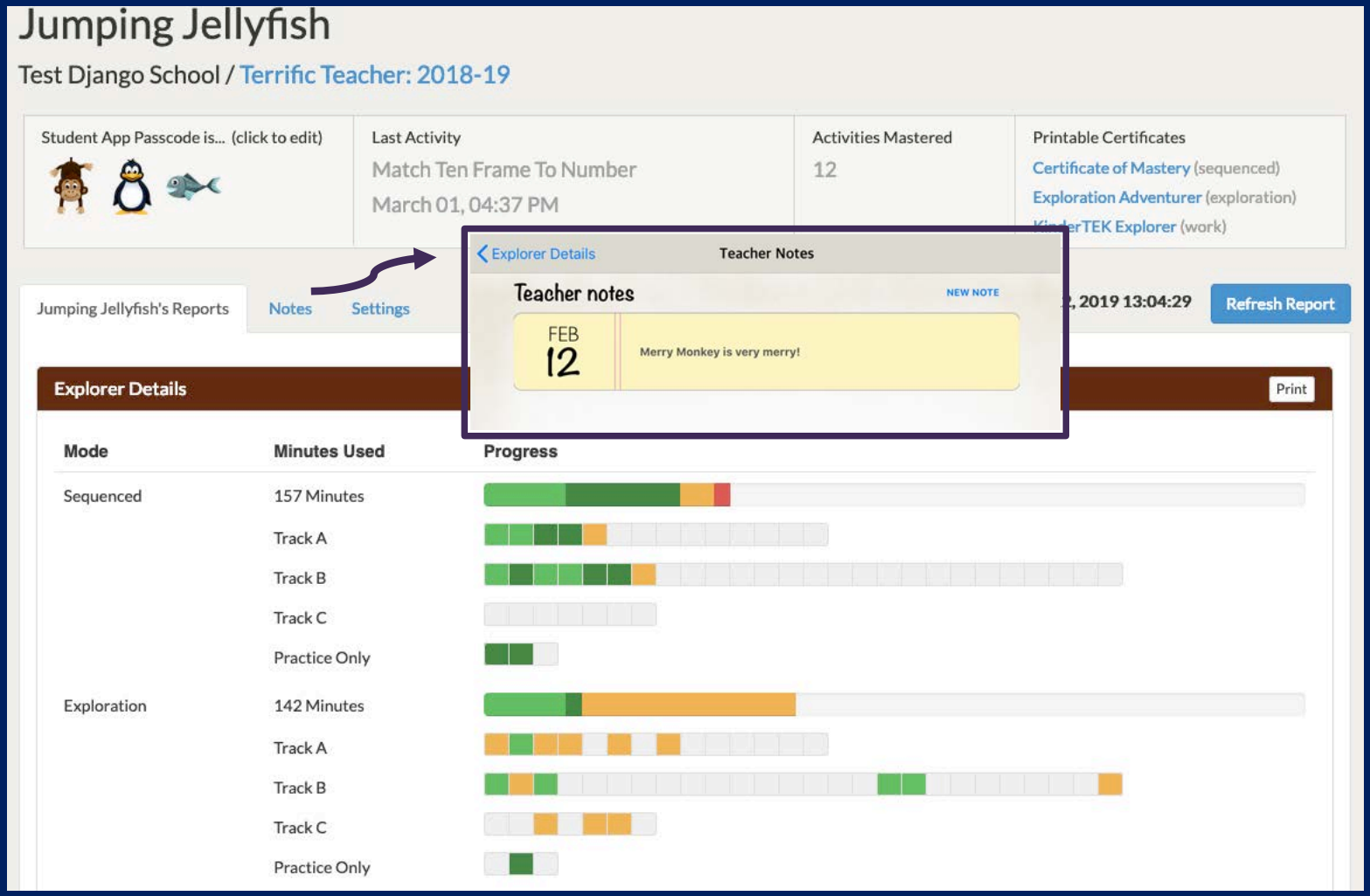
Website
(www.KinderTEK.com)
with training & resources

Now accessible by parents whose students use KinderTEK for class!

Online data dashboard



"KinderTEK has been a great addition to my classroom instruction the last couple of years. ***The students enjoy using it and I know that their time is well spent because it aligns so well to Common Core Standards…****KinderTEK is an excellent tool!"*


Jumping Jellyfish
Test Django School / Terrific Teacher: 2018-19
Student App Passcode is... (click to edit)
Last Activity
Match Ten Frame To Number
March 01, 04:37 PM
Activities Mastered
12
Printable Certificates
Certificate of Mastery (sequenced)
Exploration Adventurer (exploration)
KinderTEK Explorer (work)
Explorer Details
Teacher Notes
Teacher notes
NEW NOTE
FEB
12
Merry Monkey is very merry!
Jumping Jellyfish's Reports
Notes
Settings
2019 13:04:29
Refresh Report
Explorer Details
Print
Mode
Minutes Used
Progress
Sequenced
157 Minutes
Track A
Track B
Track C
Practice Only
Exploration
142 Minutes
Track A
Track B
Track C
Practice Only

Class: Terrific Teacher

Test School / Terrific Teacher

Add Student

Add Students in Bulk

Last refreshed: Dec 21, 2017 10:57:58 Refresh Report

Students | Student Groups | Student Passcodes | Class Settings | Reports (active students)

- Activity status - All Students in Class
- Use and mastery - All Students in Class
- Standard status - All Students in Class
- Fidelity - All Students in Class

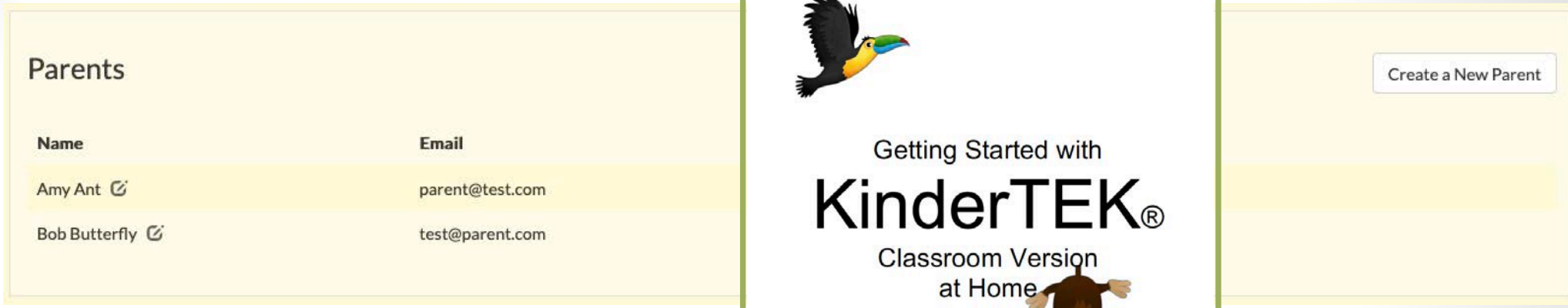
Students

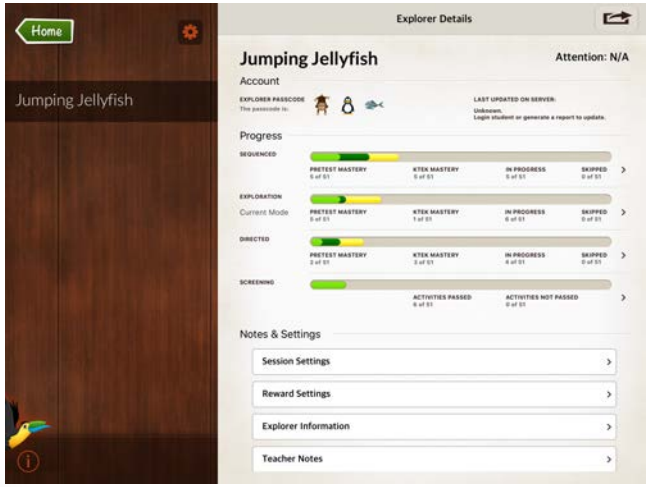
Progress and time spent progressing through KTEK.

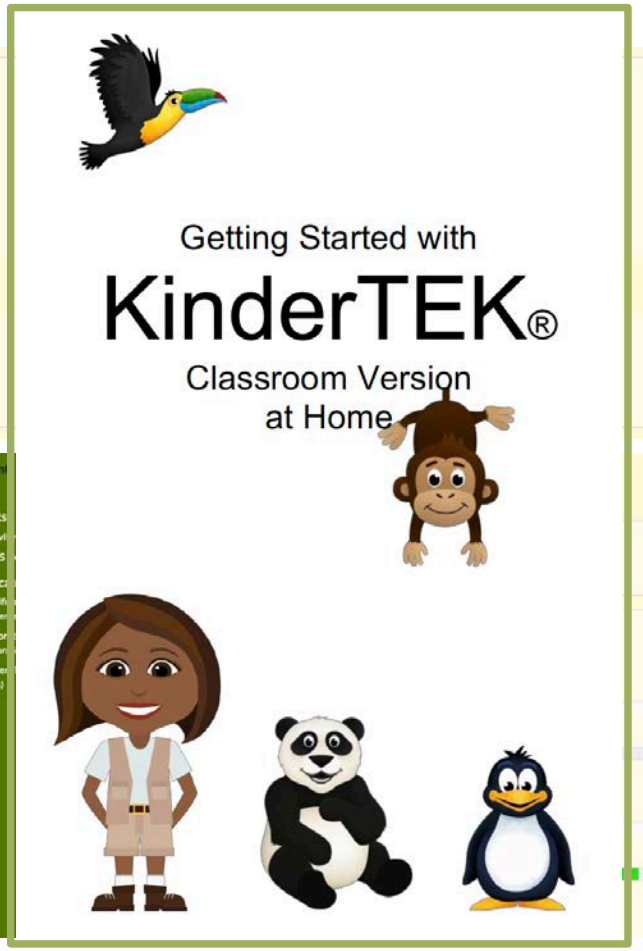
Print

Name	Nonresponse Rate for Last Session	Sequenced Mode	Exploration Mode	Directed Mode	Screening Mode
Awesome Ant (Exploration Mode)	100%	50 Minutes	10 Minutes	30 Minutes	7 Minutes
Beautiful Butterfly (Sequenced Mode)	8%	17 Minutes	8 Minutes	23 Minutes	21 Minutes
Curious Caterpillar (Sequenced Mode)	0%	73 Minutes	15 Minutes	2 Minutes	13 Minutes
Dauntless Diver (Directed Mode)	6%	21 Minutes	9 Minutes	0 Minutes	10 Minutes
Elegant Elephant (Screening Mode)	100%	32 Minutes	24 Minutes	0 Minutes	33 Minutes

Parents can now see data & kids can use same account from home!







KinderTEK system

App: Math instruction, reporting & management & supports

Available on App Store

Pro *Basic*

Web-based
Data dashboard (Pro only)

Website
(www.KinderTEK.com)
with training & resources

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- Get acclimated
- Understand the curriculum
- Understand the approach
- Get help!
  - Implementation resource library
  - Online chat for technical support
  - Contact us form

Home › Resources & Support

Implementation Resources

Library of Resources

About KinderTEK

Overview
- Video: What is KinderTEK?
- Video: KinderTEK®: An instructional math app
- Video: An Overview of KinderTEK
- The KinderTEK iPad App
- All About KinderTEK
- An Overview of KinderTEK slides
- KinderTEK Context Inventory
- Which KinderTEK Is Right For You?
- Common Core State Standards (CCSS) – Kindergarten Math

Classroom Printables
- KinderTEK coloring pages
- Llama 100s Chart
- KinderTEK Sequenced Mode Certificate of Completion
- KinderTEK Exploration Mode Certificate of Completion
- KinderTEK Explorer Math Exploration Certificate

KinderTEK Newsletters
- KinderTEK Newsletter #1: Standards vs Practices
- KinderTEK Newsletter #2: Model with Mathematics
- KinderTEK Newsletter #3: Structure
- KinderTEK Newsletter #4: Repeated Reasoning
- KinderTEK Newsletter #5: Problem Solving
- KinderTEK Newsletter #6: Reasoning
- KinderTEK Newsletter #7: Construct and Critique
- KinderTEK Newsletter #8: Strategic Tools
- KinderTEK Newsletter #9: Attend to Precision

Get Ready

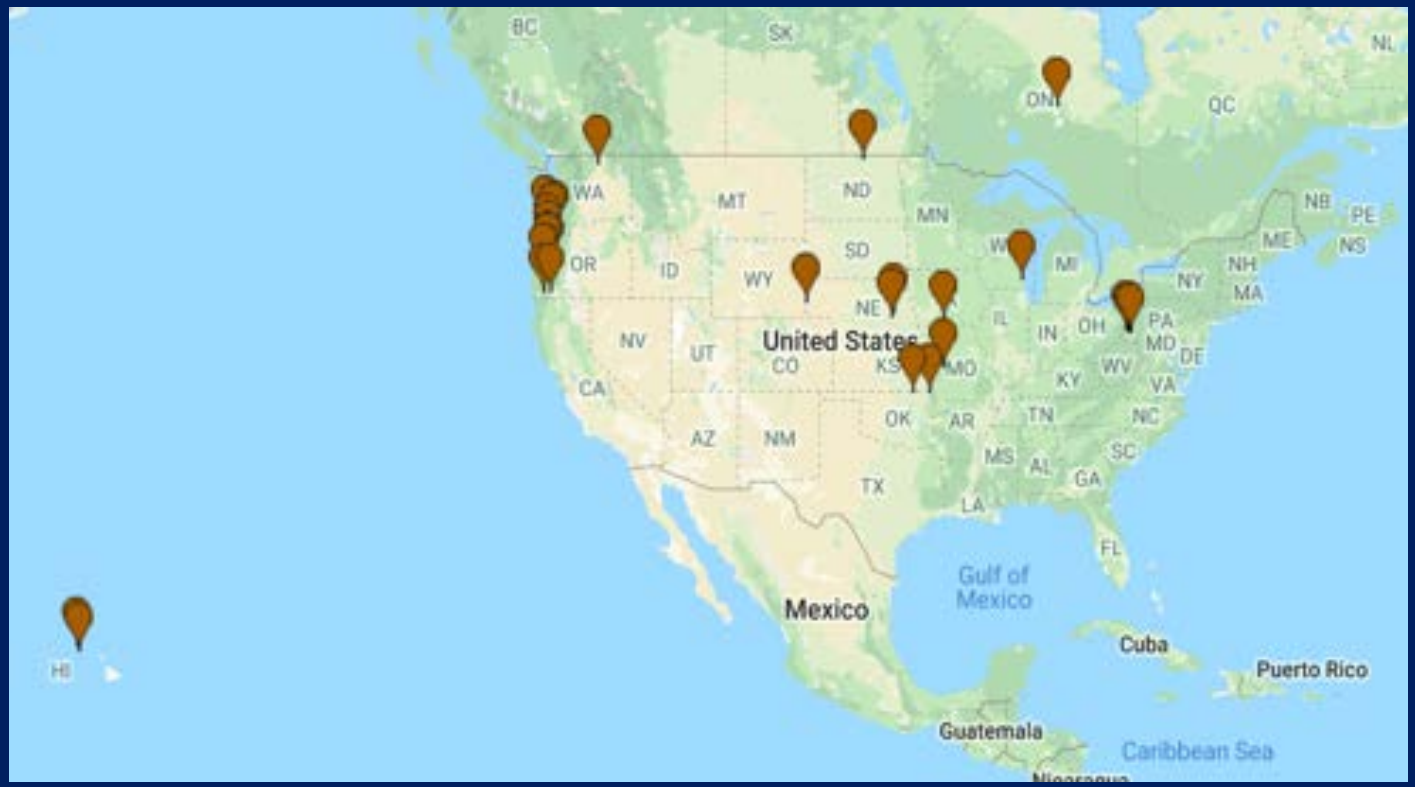
Guides
- KinderTEK Orientation for New Users
- Getting Started with KinderTEK handbook
- Tech Information for Schools
- Helpful iPad hints
- Find and update iOS version on the iPad
- How to Print Student Passcodes
- Troubleshooting for KinderTEK Use

Printables
- Get Tech Ready for KinderTEK: Connectivity
- Educator Readiness Checklist
- Educator Readiness Worksheet
- Technology Resource Readiness Checklist
- Technology Resource Readiness Worksheet

Get Set Up

Guides
- Video: A Closer Look at KinderTEK
- Video: Planning for KinderTEK

KinderTEK will work for you.
It can work better with planning & monitoring



KinderTEK (pre-COVID)? Over 5000 students and nearly 300 adults in over 125 schools and 50 districts.

***"It is a great way for us to ease into our math instruction** after lunch and recess."*

*"I loved introducing a 'new' skill to my K's and a student saying, **"I already know that! I learned it on KinderTEK!""**"*

*"No math curriculum is perfect, so having a secondary piece that they can pop into, practice the skills that they need to work on, and just really gain that knowledge that they need is **really good to support any math curriculum.**"*

***Love having KinderTEK available**, especially at the beginning of the year!*

*(To parent and student) **"You're really going to love KinderTEK! It's a fun math learning game that works on all kinds of kindergarten math skills."***

*"And I think **teachers shouldn't be scared of it because it's not scary, and is really user friendly**. And our five-year-olds can do it really well. We shouldn't feel scared of it."*

***"It was rewarding to see the students who struggle with math experience success with KinderTEK.** It helped them to understand new concepts, as well as master concepts through repeated practice."*

***KinderTEK was an exciting fun way to practice math!** We LOVED it!*

*"With KTEK, **they're able to really be independent and to go at their own pace**."*

*"…they love it and it's so fun. Well, that's the best. **That's what we want them to do for all their experiences, to enjoy and have fun in learning new things**."*

IES NCSER Goal 2 Dev't (2011-15)
Strand Cary, M. & Clarke, B.

IES NCER Goal 3 Efficacy (2017-21)
Strand Cary, M., Shanley, L., & Clarke, B.
Institute of Education Sciences
U.S. Department of Education

OSEP Stepping Up Technology (2014-19)
Strand Cary, M. & Clarke, B.

IDEAs that Work
Office of Special Education Programs
U.S. Department of Education

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Strand Cary, M. (2020, May). *KinderTEK: iPad math instruction for the youngest learners at home and school.* [PowerPoint slides]. Presented during the State Personnel Development Grants (SPDG) Directors' Webinar . Online, May 7, 2020.

CTL Center on Teaching & Learning

Questions?
Mari Strand Cary
mscary@uoregon.edu

Get KinderTEK on the Apple App Store

Educators can contact us at www.KinderTEK.com for a FREE "Pro" license for iPad-equipped students to use at home during COVID! → →

KinderTEK Research 4+
University of Oregon Digital Press
Free

Families, if using on their own, can download "Basic" for just $0.99 → → → → → → → →

KinderTEK Math 4+
University of Oregon Digital Press
$0.99

www.KinderTEK.com

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Download free implementation resources