



TEACHER's GUIDE 2.0 FOR USAGE OF CLEVERBOOKS PRODUCTS BASED ON AUGMENTED REALITY

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TEACHER's GUIDE 2.0

This book is designed to support primary school teachers with ideas for teaching with Augmented Reality using CleverBooks mobile applications and product range.

Teacher's Guide Book 2.0

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What are we doing and where might we go in AR in education?

A limited number of schools have begun to embrace augmented reality (AR) in their classrooms. The emerging technology is useful as a supplement to classroom materials and curriculum. Teachers can generate models of the solar system, animals on distant continents, and three-dimensional shapes with minimal financial resources to supplement their mobile device program. AR is a newer technology to many but over one billion mobile devices are capable of running AR applications and in circulation around the world. The most common examples of AR are the uses in sports broadcasting to supplement the home viewer, pokemon go, Snapchat filters, and the emerging trend of heads-up displays in the automotive industry. More recently there have been television commercials for IKEA and British Petroleum illustrating the uses of AR in their industry, and apps exist for travelers to scan street signs or documents in other countries and get translated text in their native language.

Classroom teachers use CleverBooks and other apps to supplement the work in the classroom. The 2-D images in the books, or on the printable sheets, generate high quality content when scanned by the teachers. Scanning the continent of Africa can show weather patterns, indigenous animals, historical sites, and many more items. Three-dimensional geometric images are difficult for teachers to draw, but in CleverBooks a perfect example is available to each student any time they scan the 2-D image.





Future uses of AR – emerging trends in AR app development – It is now possible to build collaborative AR apps. Educational support companies can work on AR apps that facilitate group work in classrooms. Group work and collaboration are often facilitated in classrooms and this new potential will be embraced by teachers and connect bring more professionals into the practice of using AR in classrooms.

We have already seen artificial intelligence (AI) enter the virtual reality (VR) space. Developers have begun creating VR apps that use AI to answer students' questions. As the students respond to the prompts in the VR environment the program will learn and improve the responses it offers students in subsequent uses. It is very natural to believe that the power of AI will be implemented in curricular AR apps in the near future.

Additionally, some AR developers have begun to build platforms that will allow teachers to develop their own AR apps for their classroom. When webpages were first possible, it took time to learn the coding language(s) required to create the desired outcome. Years later, platforms became available to allow individuals to develop webpages without knowing the code. Platforms for 360 video, VR, and AR are all being released at this time. The litmus test of coding will no longer block creators from developing content. This emerging trend will enable interested teachers to develop AP apps specific to their classroom and curriculum.

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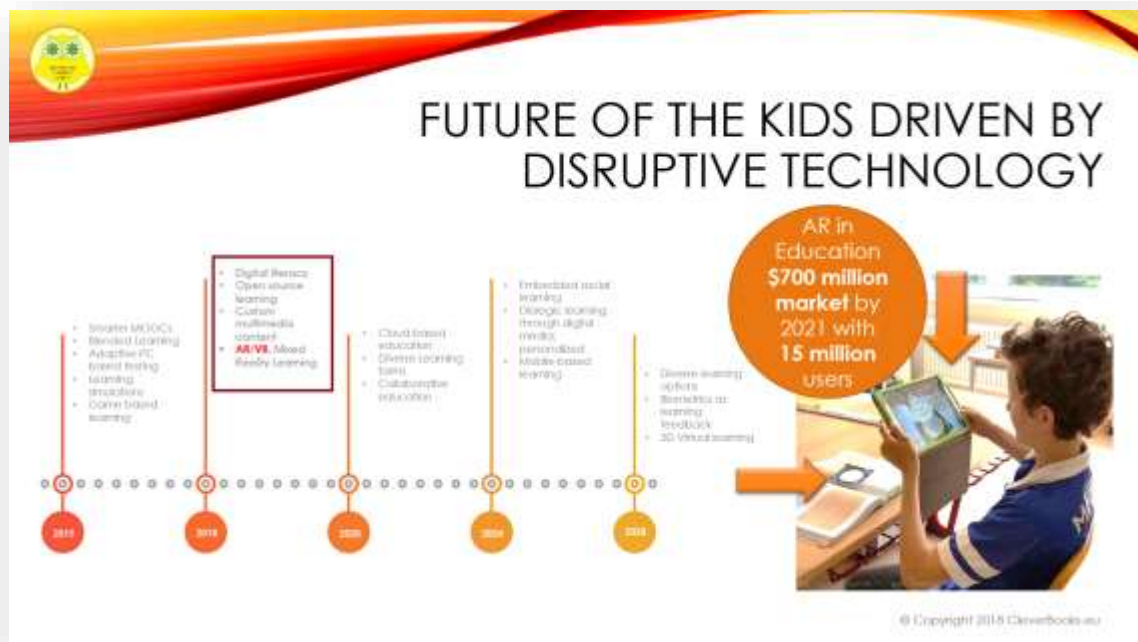
The significance of Augmented Reality- based learning: Bridging the technology gap in Education

"If we do not change the way we teach, thirty years from now we will be in trouble."

Jack Ma

The World Economic Forum presented the top skills that will be required for the jobs of the future in the next 10 years: problem-solving, critical thinking and creativity. Those skills will differentiate humans from machines in the digitized era. The skills that today's *children* need to develop to prepare for the future workforce.

According the multiple research and current technological trends, Augmented Reality (AR) is one of the top 5 EdTech that will become significant and change the educational landscape in the next decade.



Top 5 benefits of using Augmented Reality in education:

- Visual perception of material and more independent learning using the key modalities: seeing, hearing and doing.
- Ability to teach and do experiments that otherwise would not be possible in real life.
- Easy onboarding and does not require technical competence.
- Helps students develop necessary skills required from the 21st-century workforce.



- Increased students' participation in the class lessons thought a fun, interactive and engaging learning environment.

AR SUPPORTS STUDENTS' INDIVIDUAL LEARNING STYLES
engages them both inside and outside the classroom

THE DIFFERENT STYLE OF LEARNING

LEARNING STYLES

VERBAL
Language: the child prefers using words in both speech and writing and loves role-playing.

PHYSICAL
Kinesthetic: the child prefers using the body, hands and sense of touch to learn.

LOGICAL
Mathematical: the child prefers using historic, logic and recognition patterns, easily.

SOCIAL
Group-oriented: the child prefers to learn within a group and is usually a good communication.

SOLITARY
Independent: the child prefers to learn and work alone and often independent play.

VISUAL
Spatial: the child prefers using pictures, maps and icons by observing and drawing.

AURAL
Auditory: the child prefers using sound and music and learns by listening and hearing feedback.

Improves test-score by up to 33% and increases retention rate by up to 100%

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Augmented Reality makes a difference the education because it is a proven fact that Augmented Reality engages them both inside and outside the classroom, improves test-score by up to 33% and increases retention rate by up to 100%. It supports all learning styles: verbal, physical, logical, aural, visual, social and solitary. Teachers are looking to use Augmented Reality as per research conducted in 2017.

School budgets may restrict school trips, or, for example, a teacher can't bring real animals in his classroom, or a spaceship. Augmented Reality technology can step in and support learning. Augmented Reality is easy to adopt and a teacher doesn't need to be techie to use it in his classroom. Augmented Reality apps are plug and play solutions and normally even do not require any internet connection. Majority of solutions based on Augmented Reality are easy to use and can be a great visual aid for any classroom even with one device.

Goldman Sachs has conducted a research in 2016 projecting a high potential of application of Augmented Reality in Education and **Google for Education** is currently doing a lot of work in the sector that can add a new dimension to the curriculum.



STEM and Augmented Reality go along together is an extremely great combination. They provide all necessary resources for kids to learn in groups and on their own, for teachers to excite, innovate and motivate to go back to the learning material right in the classroom. The great part with Augmented Reality is that outside the classroom any kid can come back to the material he would like to repeat for himself without asking teacher for help (saves time for teacher and encourages kids to learn on their own and also those kids who are afraid to ask for help).



The future workforce is right now at kids' desks at school. Why not investing in the now and help them to get the skills businesses need for the future jobs? It is much more expensive and time consuming to teach employees when they join the company. Digital skills and STEM knowledge are must today. They form the important basis of the 21st century skills.



Apply for Teacher Training in Augmented Reality

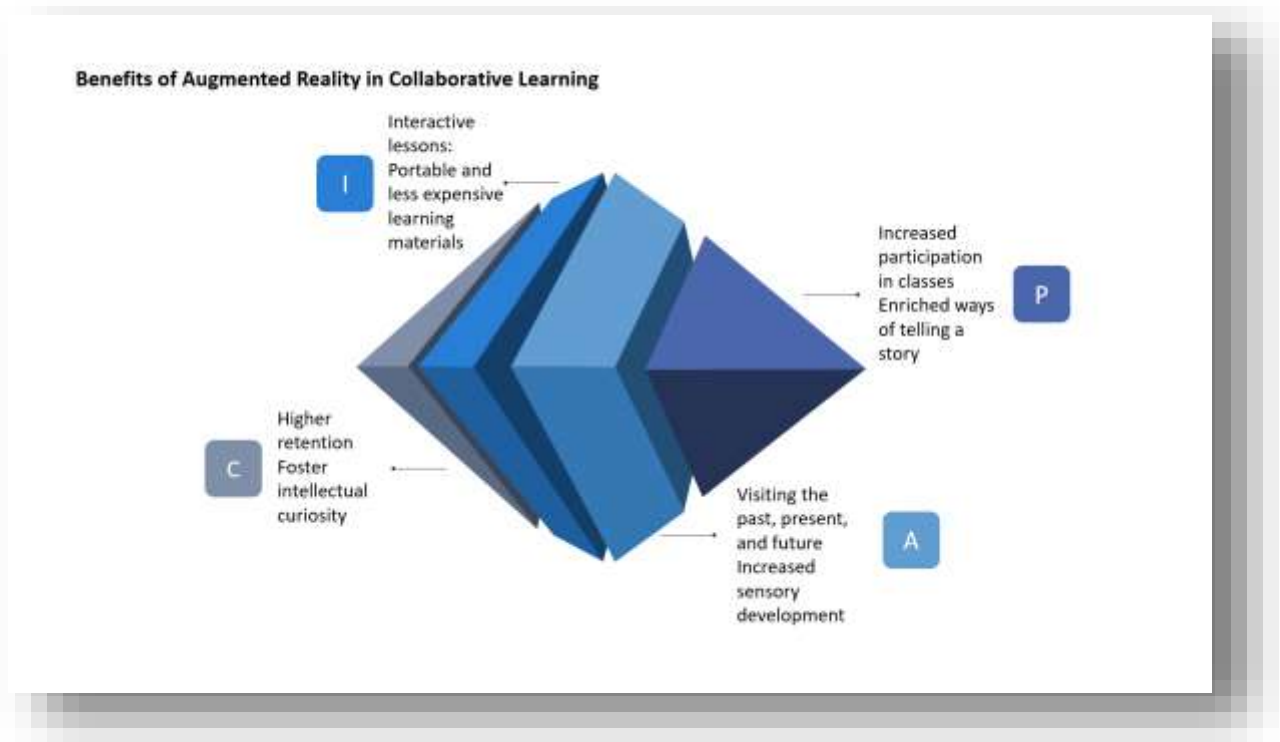
CleverBooks has created a training course that YOU can deliver to your peers. The product you receive is a comprehensive pre-designed Power Point presentation with the slide notes for your convenience.

LEARN MORE: <https://www.cleverbooks.eu/product/teacher-training-in-augmented-reality/>



Selection of Research Study and Articles on the topic “AR in Education”

- Article: 5 Skills AR Can Grow in Future Entrepreneurs – [LINK](#).
- An article in STEM Magazine "[Why STEM education needs AR](#)"
- Webinar “[Augmented Reality in the Classroom](#)”
- Article “The benefits of augmented reality in education and learning process “– [LINK](#).
- Augmented and Virtual Reality Reaching Full Bloom Read the article <https://www.k20connect.net/single-post/2018/09/06/Augmented-and-Virtual-Reality-Reaching-Full-Bloom>
- Augmenting your classroom Reality in STEM learning <http://ace-ed.org/> Page 20-21
- 100 Voices of AR and VR in Education <https://www.virtualiteach.com/single-post/2018/11/28/100-Voices-of-ARVR-in-Education>





Watch the videos

“Augmented Reality in Education” ([Global Female Leaders' Summit, Berlin, 2018](#)).



“Using Technology to Enable Education at Any Time, Anywhere” ([Dublin Tech Summit: 2019](#))





“Diversity in learning STEM concepts through Augmented Reality (AR)” ([DojoCon, Dublin 2018](#))



Additional resources to give you some extra information and ideas from other educators:

Interested in news about Technology in Education? Visit this [PAGE](#).

Looking for public opinion on emerging technologies in education? Follow our [BLOG](#) or [Soundcloud](#).



SEE, HEAR AND TOUCH THE KNOWLEDGE

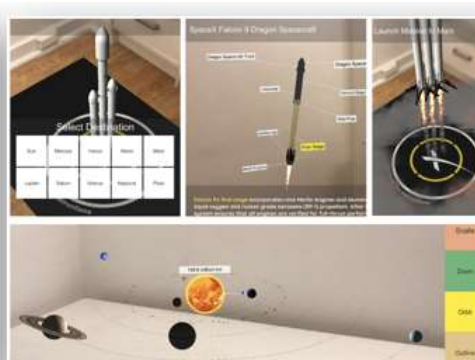
CLEVERBOOKS RESOURCES



Social Studies/Geography



Math



Engineering

Current Solutions with AR

Geometry, Geography and Engineering/Space

Current Products covering STEM in primary school

- Geometry: DIY building blocks ([available](#))
- Geometry Pocket Workbook ([available](#))
- Geography Pocket Workbook ([available](#))
- Geography: World Map ([available](#))
- Engineering/Space: demo version ([available](#))
- Space: poster, pocket workbook (official launch in Q2 2019)
- Literacy (English): poster (official launch in Q3 2019)
- Science: poster, workbook (official launch Q3 2019)

How to use?

To use the CleverBooks Apps you need a mobile device with a camera and demo cards (identified as “Marker”) or product (World Map, Pocket Workbook, etc. You need to point the camera on a marker after launching the app and select Shapes (Geometry), Continents (Geography) or any button to your choice (Space). Experience Magic technology using the menu on the right side to switch between different modes. ([video tutorial](#)).



CLEVERBOOKS GEOGRAPHY APP



Download App for Android from Google Play (CleverBooks Geography):



Download App for Apple from Apple Store (CleverBooks Geography):





CLEVERBOOKS GEOMETRY APP



**Download App for Android from
Google Play (CleverBooks Geometry):**



**Download App for Apple from Apple
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CLEVERBOOKS ENGINEERING/SPACE APP



**Download App for Android from
Google Play (CleverBooks Space):**



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TEACHER'S SHARING IDEAS OF APPLICATION IN THE CLASSROOM

I used the Cleverbooks Geography app with our 2nd grade class. This was in connection with their classroom unit about continents and landforms. In the class, I setup the Cleverbooks materials in three stations and divided the students into three groups. The first group used iPads to look at the Cleverbooks Map. Another group of students played the role of 'human globes' by wearing the Cleverbooks T-shirts while the last group of students studied the continents that were on these 'globes'. The students rotated around each station in order to ensure that everyone had a turn to be a 'human globe' and experience the various components of the Cleverbooks materials. The classroom teacher prompted discussions and reinforced concepts by asking questions about what they had previously learned in their classroom unit.

The class had so much fun. They were engaged throughout the entire session. The students compared the continents, shared what they saw on the maps and discussed what they already knew. The students were also excited to be able to 'wear' and become part of technology via the T-Shirts.



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Technology Teacher

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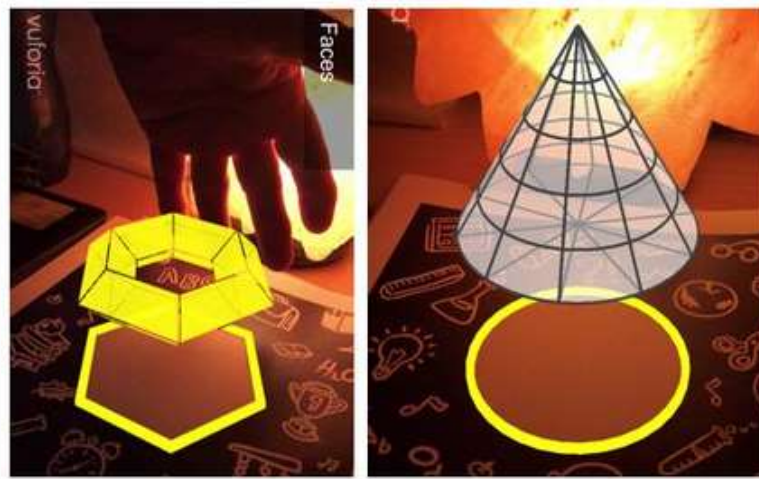


Augmented Reality for Children's Books – Review of CleverBooks

Augmented Reality (AR) is an interactive experience that brings digital assets into the real world. In the previous post “Augmented Reality for Kids – Educational Magic to Enhance Imagination and Learning”, I discussed the potential of AR in different fields such as gaming, social media, healthcare and education, just to name a few. In this post, I continue to explore AR for education, but this time I want to share my findings on augmented reality for children's books, another application of AR that again has so much potential and will fascinate kids in schools, libraries and at home.

I really like the product because they make it is so easy to put in place an AR experience that is educational and add so much value, without needing any programming or technical skills.

My little boy loved it, he was so impressed with it and he is only 2! He was looking at the normal piece of paper with the map and then the 3D animations coming through the phone. He was really trying to work it out. It was the real magic happening while learning.



I can see kids enjoying these products a lot in the classroom. Teachers could also connect one mobile device with the app to a projector, so the entire class can see the AR experience at once. Alternatively, teachers could let kids explore the app by



turns or in groups so they can share their experience and see 3D happening in the classroom.

To continue reading an article please follow this [LINK](#).

Thais Gomez

an eLearning enthusiast with a love for education.

mylove4learning.com



Would you like to be our honored Ambassador?






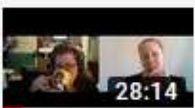
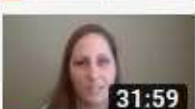

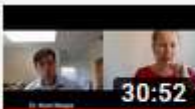



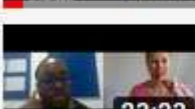

We love partnering with AR enthusiasts! If you're a trend educator in your community, actively engaged on social media, and love CleverBooks AR resources, then you are just what we are looking for!

LEARN MORE: <https://www.cleverbooks.eu/ambassadors-application/>



Video interview series “AR based technology in the classroom”

Watch useful videos about AR-based technology in education? Visit our [Youtube](#) channel

 24:34	Simon Lewis: Will Sexy and Shiny AR Be The Future In Irish Clever Books	 36:44	Melanie Maas: Developing 21st Century Competencies of Clever Books
 16:04	Martin Bailey: AR is a technology that adds another Clever Books	 20:31	Monica Burns: Is AR just "flashy and fun" or "does it have Clever Books
 20:58	Giuliana Guazzaroni: Virtual and Augmented Reality in Clever Books	 28:14	Vicki Davis: Innovate like a turtle with Augmented reality! Clever Books
 31:59	Jaime Donally: Is AR just a hype, a trend that will soon go Clever Books	 25:03	Matthew Bell: AR is a powerful visualization tool, doesn't need Clever Books
 30:52	Kevin Merges: AR allows teachers get out things that Clever Books	 23:19	AR helps to train children's minds enabling them to fit the Clever Books
 28:46	Dr. Peter Hughes: AR transports kids where they Clever Books	 26:30	AR supports empathy and increases social interaction in Clever Books
 23:23	David Talbert: AR is an innovative way of teaching kids Clever Books	 23:19	Chad Lewis: With AR students can have the ownership of their Clever Books

Interested to be our guest speaker in the video interview "AR in Education"?

Please contact our team at marketing@cleverbooks.eu



EDUCATOR'S FEEDBACK

"The augmented reality experience is awesome! I have a SMART board in my classroom. I connected my document camera to the board. I used the demo markers in a small group setting. I definitely see these resources as an add-on value to student learning."

Cleverbooks allows students the opportunity to experience learned concepts in a new and unique way, not just pencil and paper. Students can journey to continents and not just look at a traditional map".

Michelle Marrow

Henderson-Hopkins School
Baltimore City Public School System
Baltimore, MD 21205, USA

"It is amazing. The students I shared them with were excited about images. They pointed to things and named them. They particularly liked the animals and the planets. We had just talked about astronomy so they were asking where certain planets were located."

I can see the benefit of using cleverbooks in the classroom. I used the technology on my phone so I couldn't share it with a lot of kids at one time. I do have access to a projector but I couldn't figure out how to project the cleverbooks so all the awesome features can be seen".

Monique Marrow

Henderson-Hopkins School
Baltimore City Public School System
Baltimore, MD 21205, USA

"I had a small group of students in our library try out the CleverBooks Geometry app and markers. They LOVED it! The app helped to connect real world learning to abstract math concepts. The various shapes are available and some of them open and flatten to showcase all the parts of a shape. The different colors on the different shapes (White, yellow, grey) help differentiate between the different shapes".

Dr. Amanda Smith
Digital Learning Specialist
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Mr. David Griffith
Technology Integrationist, M.Ed
St. Johnsburry Academy
Jeju, South Korea

Evolution International School
Giza, Egypt

YEAR 5 USES TECHNOLOGY TO SUPPORT LEARNING. BY AYSHA

As mentioned in the previous article, Year 5 have been learning about Space. In order to support their learning, they have been using various technologies to help develop their understanding. One such technology was Spheros. The students used the spheros to show how the planets rotate around the sun. Students had to program the

spheros to make them circle the sun. While doing this, they recorded a video explaining what was happening. Another technological program that students used was augmented reality through the use of the CleverBooks Space app. Using this app, students were able to

independently research information about each planet, identify and learn about the parts of a rocket and even generate their own rocket launch. Students really enjoyed using IT to help them learn about Space and thought it was beneficial to learn in different ways.

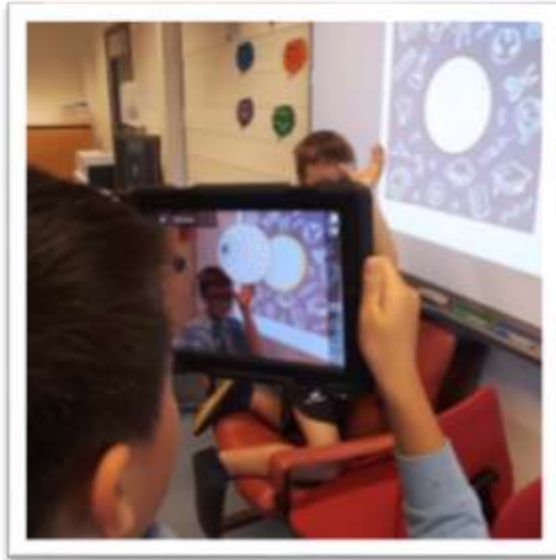




Deira International School
Dubai, United Arab Emirates



"All students were very impressed with the Geometry features they could explore using different shapes".



British International School of Stavanger
Stavanger, Norway

"Students in seventh grade world geography class used augmented reality to explore a map of the world and view it in a new way. The app provided sound effects allowing students to fully immerse themselves into unfamiliar parts of the world in just minutes".



Victoria Lewis



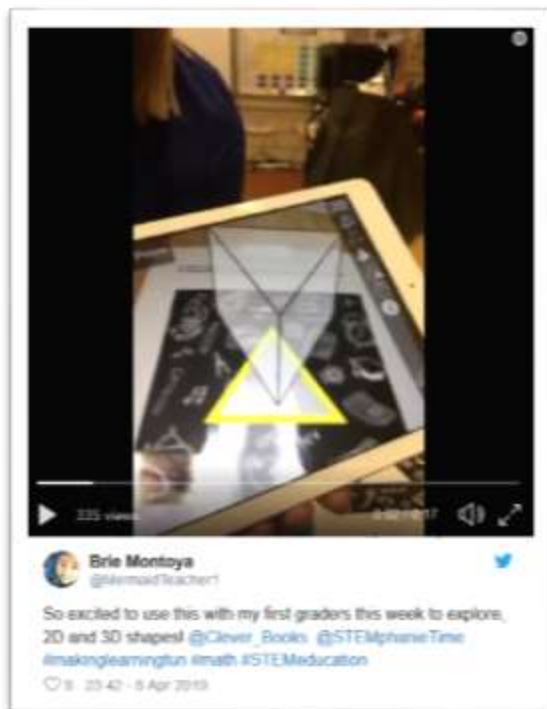
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Would like to share your experience of application CleverBooks Resources in your lessons?

Please contact our team at marketing@cleverbooks.eu or fill in the Form via this [Link](#).

Your valuable input would be featured in our Teacher Guide 3.0 in Q3 2019 and shared with educators across the world. The main goal is to build a comprehensive document that would help you use CeverBooks AR resources most effectively and provide practice exchange between educators on the global scale.

CleverBooks Team