School in the Cloud

SOLE TOOLKIT

*How to bring self-organised learning
environments to your community*

By Sugata Mitra

Help us reinvent the way students learn.

www.theschoolinthecloud.org

Microsoft

Newcastle University

TED

CONTENTS

School in the Cloud

The School in the Cloud is a platform, driven by a global community, that connects Self-Organised Learning Environments and the Granny Cloud in an organic movement towards a more inclusive, universal education.

Anyone can create a SOLE — spark curiosity in children by asking them to explore a Big Question using the Internet and their ability to work together. Learning happens spontaneously in these purposefully chaotic environments.

01 INTRODUCTION

"My wish is to help design the future of learning by supporting children all over the world to tap into their innate sense of wonder and work together."

—**Sugata Mitra,** 2013 TED Prize Winner
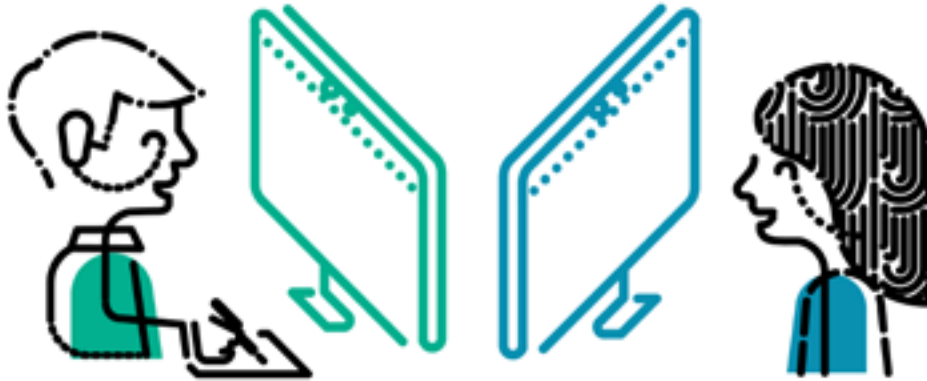
What is a SOLE?

Welcome

Welcome to the Self-Organised Learning Environment (SOLE) Toolkit, a School in the Cloud resource designed to help educators support students as they tap into their innate sense of wonder and engage in student-driven learning.

Student-Driven Learning is:

Curious

Collaborative

Facilitated by adult encouragement

Self-organised

Social

Engaged
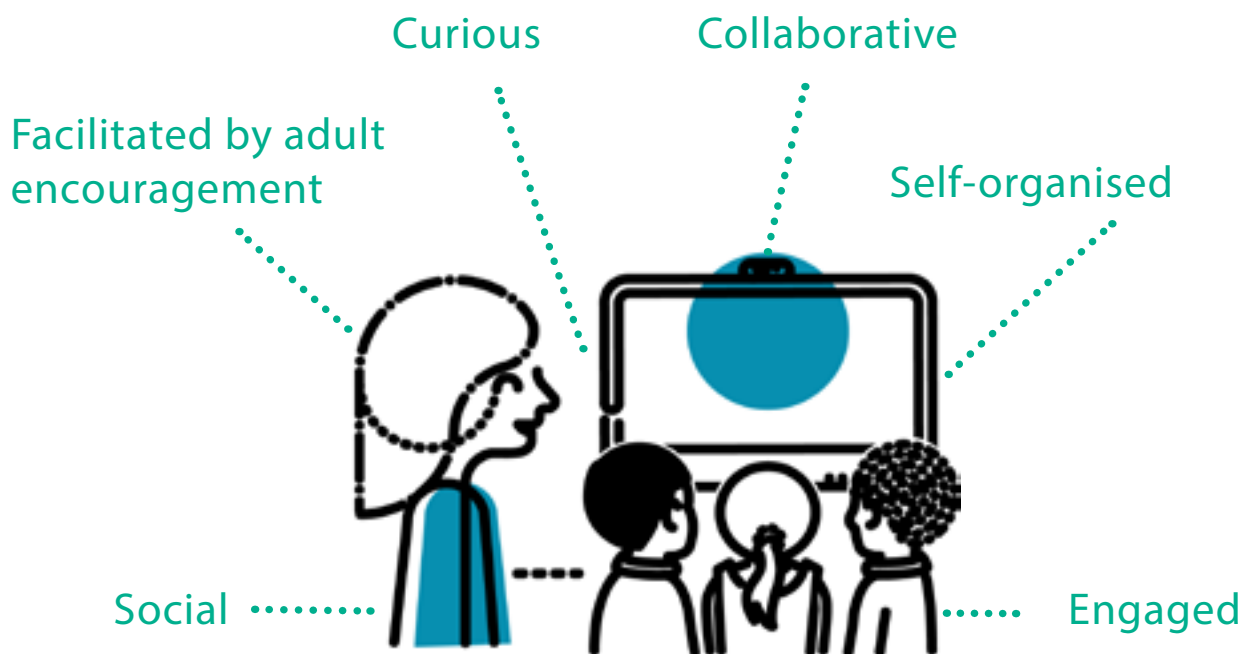
School in the Cloud

Sugata Mitra and his colleagues have carried out research for over 13 years on the nature of self-organised learning: how it works, to what extent, and the role of adults in encouraging it. His innovative and bold efforts towards advancing learning for students all over the world earned him the first-ever $1 million dollar TED Prize. At the 2013 TED conference, Sugata invited thinkers and doers worldwide to create their own self-organised learning environments (SOLEs) and share their discoveries. At TED2014 the School in the Cloud digital platform was launched which ensures that anyone, anywhere around the world, can experiment with self-organised learning.

"Education is a self-organising system, where learning is an emergent phenomenon."

—Sugata Mitra

Thank you for responding to Sugata's call to action by investing your time and creativity to improve how people learn in your community. This toolkit is here to guide you as you embark on an adventure where students organise their own learning, with a curriculum of big questions and dynamic interactions, to create boundless possibilities.

We look forward to hearing what happens on your SOLE adventures. Share your stories and feedback on the School in the Cloud platform: www.theschoolinthecloud.org

What is a SOLE? noun [sohl]

Self-Organised Learning Environment

SOLEs are created when educators encourage students to work as a community to answer their own vibrant questions using the Internet.

Rules of the Game

1) Students are given a big question or are challenged to think of their own

2) Students choose their own groups and can change groups at any time

3) Students can move around freely, speak to each other and share ideas

4) Students can explore in any direction that they choose: there may be no single right answer

5) Groups are expected to present what they have learned at the end of the session

The SOLE learning path is fuelled by big questions, self-discovery, sharing, and spontaneity. These parameters are needed to create a non-threatening environment in which children feel free to explore.

WATCH
Introduction to Self-Organised Learning
http://bit.ly/1thcMoO

Skype Grannies

Every SOLE is different, but they always support students as they tap into their innate sense of wonder and embark on intellectual adventures, driven by big questions.

SOLEs can be created anywhere in the world. In remote or disadvantaged areas where access to education is limited, mediators can use Skype to join the SOLE.

We refer to these mediators as Skype Grannies. Their role is not just to inspire curiosity, but also to help in developing language fluency and search skills that will allow children to begin answering big questions more easily. The existence of these volunteer Grannies means that no matter where a SOLE is, students have access to a supportive and encouraging mediator as they begin to learn from each other.

WATCH
Being a Skype Granny
http://bit.ly/1pRJD1I

Why set up a SOLE?

Here are just some of the ways that people can benefit from SOLEs:

EDUCATORS WILL

- Get better at asking big questions
- Become more in tune with the interests of students
- Cultivate a learner-driven culture of curiosity
- Feel connected to students on a more equal level
- Expand their understanding of how much students can learn on their own
- Share in their students' process of discovery through an invigorated learning environment

STUDENTS WILL

- Be empowered to take ownership of their learning experience
- Improve reading comprehension, behaviour, language, creativity and problem-solving abilities
- Enhance computer literacy
- Develop the habits of a lifelong learner
- Develop stronger memory recall
- Strengthen interpersonal and presentation skills
- Get better at integrating what they already know into discussions both inside and out of the classroom
- Develop a more trusting relationship with educators and adults generally
- Become more motivated to learn about different subjects and ideas

The SOLE Mindset

To make the most out of the experience, adopt the SOLE mindset:

STUDENT-DRIVEN

Students are motivated by choice and the interests they share with their friends so that self-organised learning is more sustainable.

COLLABORATIVE

Students learn socially before internalising knowledge. Learning with a group also helps with memory recall and the development of social skills.

CURIOUS

All people are born with an innate sense of wonder. Students construct their own understanding of new concepts by relating it to what they already know.

OPEN-MINDED

Students are capable of understanding more than adults usually give them credit for, especially when they are in a flexible environment where they are encouraged to experiment, "unlearn" assumptions when necessary and make mistakes.

TRANSFORMATIVE

Students have the ability to think critically and can learn astonishingly quickly.

ENCOURAGING

The most effective educators are great witnesses, supporters, and structure providers, but not answer-suppliers. The Internet helps students answer almost any question and encouragement helps them have the confidence to be resilient and solve problems for themselves.

PATIENT

It may take some time for educators to become comfortable with a new technique and for students to adapt to a new way of learning. If at first you don't succeed, keep trying.
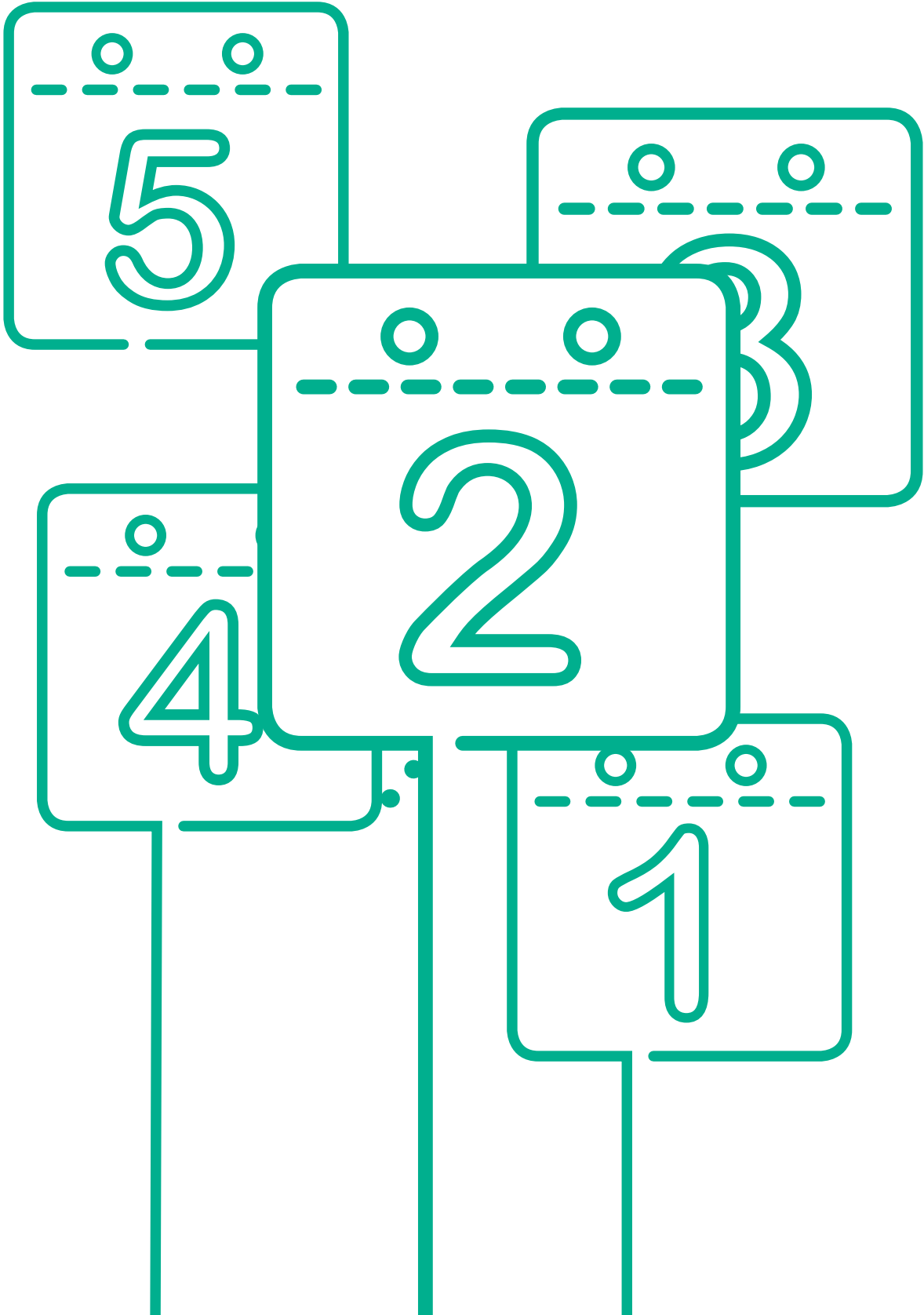
"Who knows what we'll need to learn thirty years from now? We do know that we will need to be good at searching for information, collating it, and figuring out whether it is right or wrong."—**Sugata Mitra**

How to set up a SOLE

Build your SOLE

Optional Webcam

Internet Access

Hint
Computers with large screens are better as they help facilitate group work. They also make the students' work more visible which helps you see what they're doing.

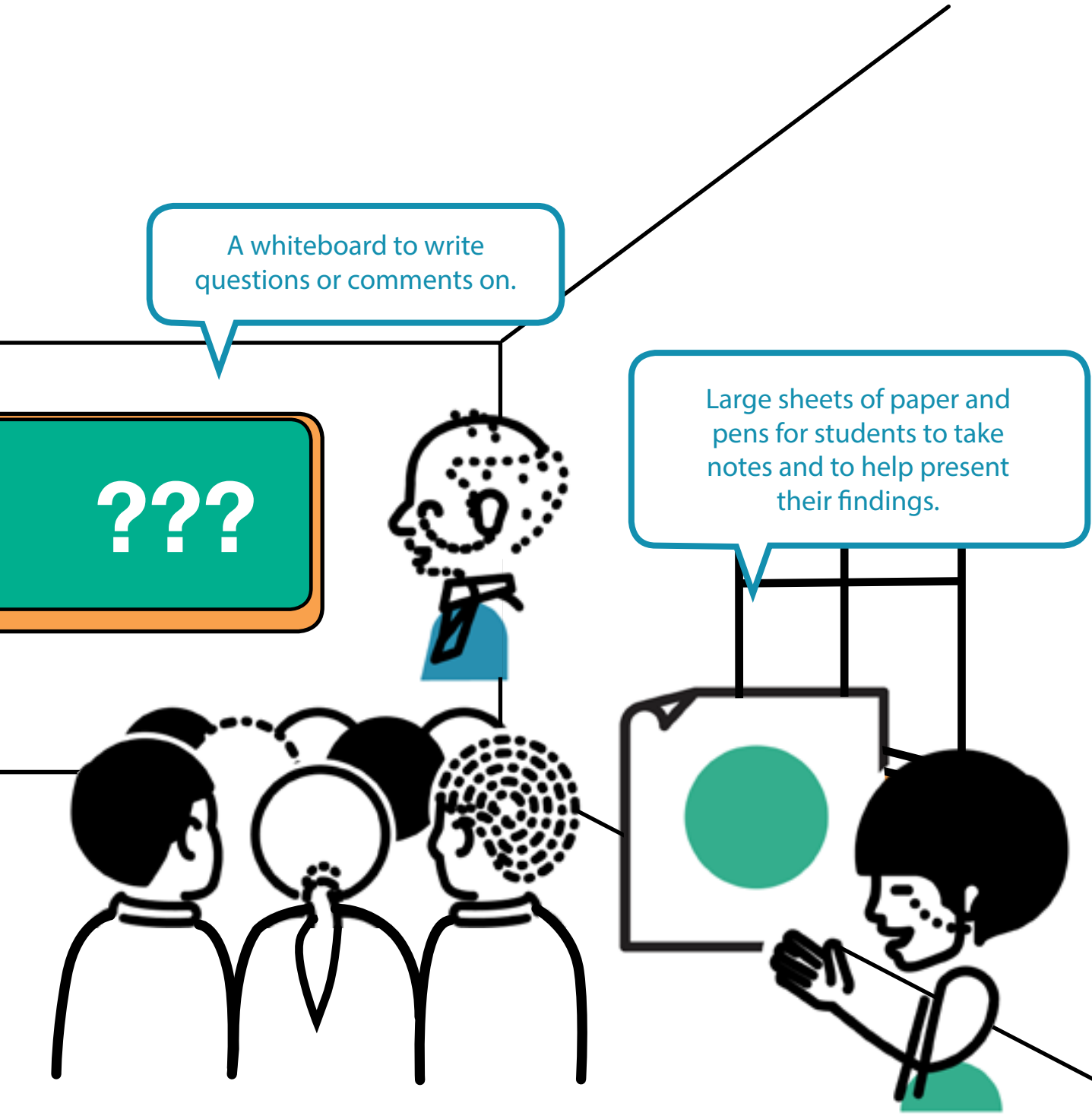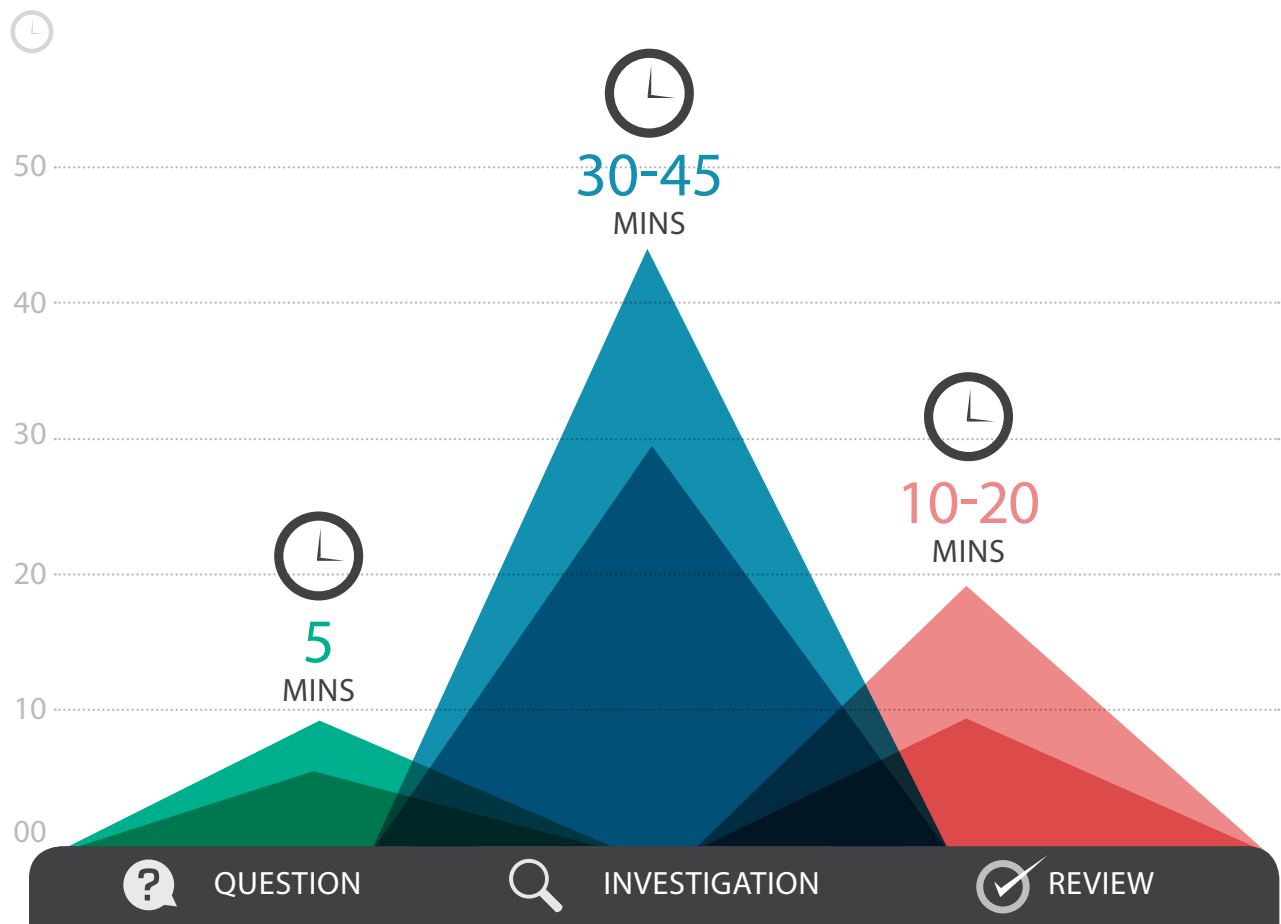**???**

One computer per four (approx) students.

Limiting the number of computers ensures peer learning and collaboration which is an essential aspect of the SOLE experience.

HOW TO RUN YOUR SOLE: APPROXIMATE TIMINGS

Below is an outline that can be adjusted to fit your schedule, space and specific circumstances.

30-45 MINS

5 MINS

10-20 MINS

| QUESTION | INVESTIGATION | REVIEW |

HINT

SOLEs are not meant to be static but will change and adapt over time. A willingness to experiment with new approaches is therefore essential. For example, instead of asking each small group of 4 to present their findings, ask the groups to collaborate and present one single answer representing the whole class.

Question

5 MINS

- Pose a big question (see the next section 'Discovery' for details).
- How you ask the question is almost as important as what you ask. Try to frame the question as a genuine process of discovery in order to promote curiosity.
- Explain the SOLE process.

Investigation

30-45 MINS

- Students work in groups to find answers to the big question online.
- Encourage students to resolve any group issues themselves. Stand back and trust your students!
- Observe and document the SOLE: take notes and photos to monitor change over time and ask the participants about their SOLE experience.

Review

10-20 MINS

- Invite the students to share their stories of collective discovery: what are the similarities / differences between their answers? Help them to see links to other areas.
- Encourage debate. Facilitate a discussion about the question itself and their investigation process.
- Engage the students in their own review: what would they do differently next time, both individually and collectively? What do they think they or others did really well? The time required for review and feedback may vary depending on the complexity of the question posed during the investigation period and the answers the students find.

03 BIG QUESTIONS

"The right answer to a trivial question is also trivial, but the right question, even when insoluble in exact form, is a guide to major discovery." —Edward O. Wilson, 1998

What makes a good question?

Big questions are a crucial part of SOLE sessions. Asking an interesting and relevant question is the thing that fires children's imaginations and curiosity.

Developing a big question can also be the hardest part of running a SOLE session. This guide should give you an idea of where to start, including a few suggestions to get you thinking and help you learn what makes a good big question.

Hint
You're not the only one that can create and suggest big questions – they can also be developed by the children themselves, depending on what they're interested in.

What makes a good Big Question?

Big questions are the ones that don't have an easy answer. They are often open and difficult; they may even be unanswerable. The aim of them is to encourage deep and long conversations, rather than finding easy answers.

These questions encourage children to offer theories, work collabo-ratively, use reason and think critically.

A good big question will connect more than one subject area: "What is an insect?" for instance, does not touch as many different subjects as "What would happen to the Earth if all insects disappeared?"

Some questions are ambiguous, some precise, some light-hearted, and some poignant. They can tie in with what the children are learning at school, come from their everyday experiences, or be something completely new.

They should encourage research, debate and critical thinking. Big questions aren't just about getting the 'right' answers, but about learning the methods and skills needed to find the answers.

Simple questions
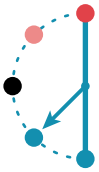
Big questions can start as something that seems quite simple. For a new group, or one where there are limited search or language skills, it can make sense to start with narrow, focused questions. These will help improve search skills and introduce a new way of working, getting the children ready for more open questions.
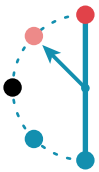
Some examples include things like:

WHERE WHO WHAT is the largest animal in the world?

Some harder questions

As children get more comfortable answering simple questions, or if they're already proficient with search and language, you can start asking some tougher questions that don't have such a direct answer.

These should encourage children to explore a wider topic, connect a number of subjects, and develop a deeper understanding of their answer. It's the difference between "What is the largest animal in the world?" and "Why are there no animals bigger than a blue whale?"

You can also ask more philosophical questions, or ones that are more specific to a country or region. There are really no limits to what a big question can be, as long as it is thought-provoking and captures children's attention.

A few examples:

🌍 **?**	Is life on earth sustainable?
🤖 **?**	Will robots be conscious one day?
💧 **?**	Why do people slip when it's wet?
👁 **?**	How do my eyes know to cry when I'm sad?
–# **?**	Can anything be less than zero?
⚠ **?**	What is the greatest threat to our oceans right now?
🎵 **?**	How was music created?
🧠 **?**	What is a brain?
abc **?**	Who made the alphabet?

Need help developing your big question? Find more examples in the School in the Cloud Library, or ask other educators for advice in the community section of our platform.

▶ **WATCH**
Choosing the right big question
http://bit.ly/1tN7eaN

Tips for handling challenges

While every SOLE experience is unique, here are some common situations you might encounter.

PROBLEM	POSSIBLE SOLUTION	OUTCOME
One student complains that the rest of their group is messing around	Educator reminds students that they can change groups at any time	Students recognise that they can make choices and change the situation for themselves
An entire group is not working on the task at hand	Remind the group that they will be expected to present their findings towards the end of the session	Students recognise the need to choose a team that can work together. They are reminded of their responsibility to present their answer publicly to contribute to the collective knowledge
A group presents an inaccurate or irrelevant answer	Encourage other students to challenge the answer eg 'did anyone find anything different?' and then initiate a conversation about why they might arrive at different answers, linking to the reliability of sources	Students learn how to challenge each other and to debate answers. They also begin to understand what constitutes viable evidence and to interrogate Internet sources more critically
Students complain that there is nothing to do because someone else is using the computer	Remind students that they can change groups at any time. During the review ask students how they felt about sharing computers and discuss future solutions	Students learn to develop their own solutions, manage relation-ships and become more resourceful

PROBLEM	POSSIBLE SOLUTION	OUTCOME
Students have trouble reading material they find online	Since students have different reading levels, encourage them to consult with other groups who might have more able readers or who might have found more accessible sites. Encourage perseverance and finding alternative solutions. Always ask students to explain their findings in their own words rather than reading directly from a source	Students don't see reading as a barrier. This reduces anxiety about presenting information
Students seem to find an answer very quickly and then just mess around	Encourage students to move around and see what other groups have found, if they have different information can they incorporate that into their answer or explain why? Ask them whether they are confident that the answer they have is accurate, considering the sites they used	Students learn to extend their own learning by understanding that 'an answer' is not necessarily the end of the journey

Remember that it might take a while for students to adapt to working in SOLEs. It might be quite different to the ways in which they've been asked to work in the past so give them time! It could take a few sessions for them to adapt and to believe that that they'll really be left to organise themselves.

SOLE is a global laboratory. Share your feedback and help us reinvent how students learn.

Tell us your stories!

SUBMIT YOUR FEEDBACK

THE SCHOOL IN THE CLOUD

Meet a global community of educators and researchers, share what you've discovered and learn from each other's experiences on the School in the Cloud platform:

https://www.theschoolinthecloud.org/

EMAIL

Write to us:

sally@theschoolinthecloud.org | Community Manager
support@theschoolinthecloud.org | Technical Support

SOCIAL MEDIA

Tweet us at

@schoolincloud

to share your SOLE stories using this hashtag:

#solecentral

Find us on Facebook at

www.facebook.com/theschoolinthecloud

and like us for regular updates on what is happening in the world of SOLE.

INSPIRE

SOLE Stories

Lawrenceville, NJ, USA | 2013

SOLE champion Joe Jamison describes how, in their first SOLE of the 2013-2014 academic year, his students were shown a picture of the Roman Colosseum and asked to develop a series of questions. "What is it?" "Why is it broken?" "What was/is it used for?" "Why don't they fix it?" The students organised themselves into groups and proceeded to research, collaborate and tweet about the process while creating their presentations. By using the hashtag **#TEDSOLE** on Twitter, the class connected with a group of home-schooled students who just happened to be at the Colosseum that day! The class and group of students developed an international relationship via Skype in which they exchanged BIG idea questions and answers throughout the school year. Joe explains that "it was a crazy first SOLE experience" that had students hooked right from the beginning as it made SOLE so real for them.

Find out more on the link below:
http://www.youtube.com/watch?v=JAsZIq2bjuI

Ontario, Canada | 2013

Bill Ferguson is an educator in Ontario. He teaches Grade 5 and together they have been using SOLE daily to become "co-conspirators in their education." As a result of what he has seen in his classroom on a daily basis, Bill is a firm believer in the use of SOLE as an effective learning strategy.

He explains that it is not just appropriate in some lessons, it has replaced some traditional strategies "We use it in many different subjects daily. For example, it has replaced my reading program as they have become more focused and are learning far more about the world, researching and presenting information. Reading levels went up more than could be expected...I have reached the conclusion that it doesn`t matter what the students are reading, as long as they are reading. From there we can teach them anything they need to know."

Bill also recognises the wider impact that SOLEs have on his students, "They face praise and criticism every time they stand up to present. Weaker students participate without hesitation."

ACKNOWLEDGEMENTS

And thank you to thousands of children around the world.
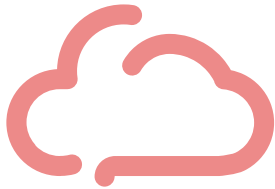
"My wish is to help design the future of learning by supporting children all over the world to tap into their innate sense of wonder and work together.

Help me build the School in the Cloud, a learning lab in India, where children can embark on intellectual adventures by engaging and connecting with information and mentoring online.

I also invite you, wherever you are, to create your own miniature child-driven learning environments and share your discoveries."

– Sugata Mitra