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How does using the Hopscotch app enhance Year 4 boys' creative thinking skills?



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Perth, Western Australia

2014/2015



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Research Context

- Christ Church Grammar School (CCGS) is a Pre Primary to Year 12 Anglican School for boys located in a high socioeconomic suburb of Perth, Western Australia.
- At the start of 2014, each Year 3-6 boy had their own iPad, stored within the classroom.





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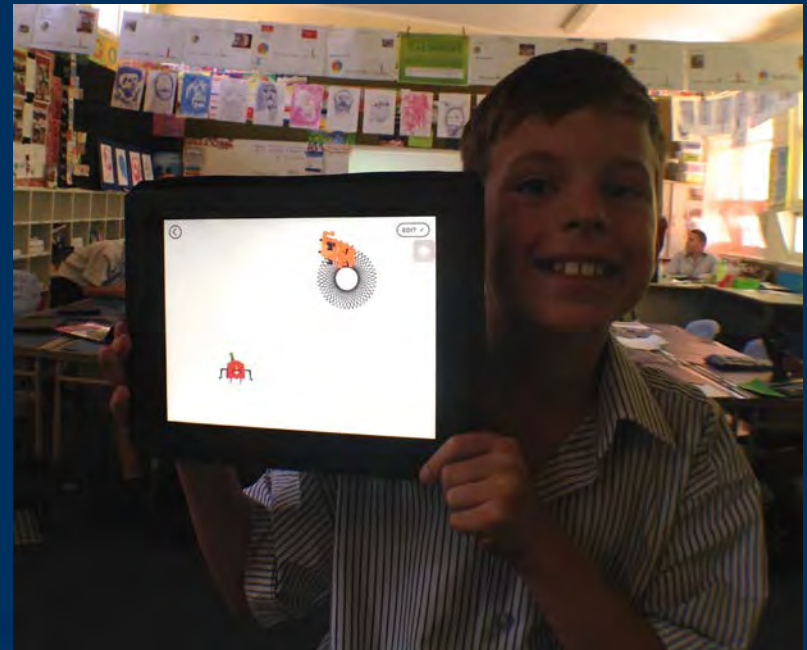
Aim

ICT Component:

- Teach coding
- Familiarisation with iPads
- To shift their perceptions, from a gaming console
- Readings: Martinez, S., & Stager, G. (2013), Mayo, L. (2013), Turra, N. (2014)

Maker Learning Component:

- Create, make, share
- Student centred





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Aim

Literacy Component:

- Use interesting vocabulary & correct writing conventions
- Engage the audience (Year 1 buddy)
- Narrating a story that has a moral
- Story boards of the story

Overarching Component:

- Use creativity
- Open-ended task





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Readings

- Shortage of STEM graduates & the struggle to fill programming jobs.
- Coding needs to start at a young age.
- Other countries around the world, including Vietnam, the UK and Estonia start teaching programming as young as four.
- Gives a broader understanding to the importance of coding and why we should undertake it.



Article by Leni Mayo, ABC



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Research Question

How does using the Hopscotch app enhance Year 4 boys' creative thinking skills?

Some of the common creative thinking abilities are brainstorming, creating, designing, entertaining, imagining, innovating, problem solving and questioning. (Thoughtful Learning, 2014).





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Participants

- 24 boys
- Year 4
- Whole class





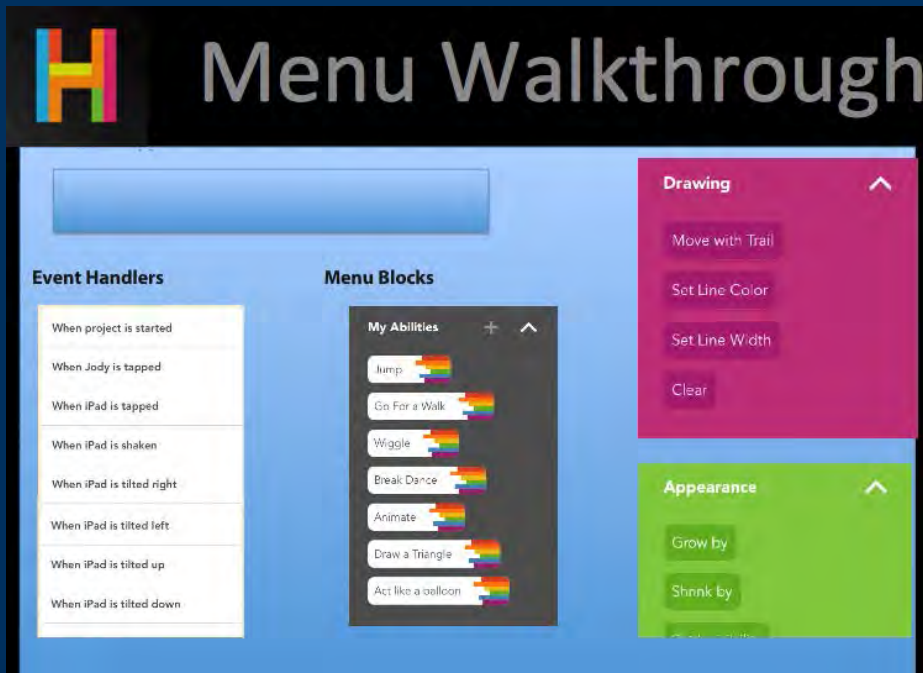
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Action

- Introduced to Programming & Computer Science
- Menu Walkthrough





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Action

- Challenges – *make a square*



SQAURE LAB

REVIEW YOUR SOLUTION

Great job! Here's how we made a square using a repeat block:

When project is started

Repeat Times 4

Move with Trail Distance 300

Rotate Degrees 90

End

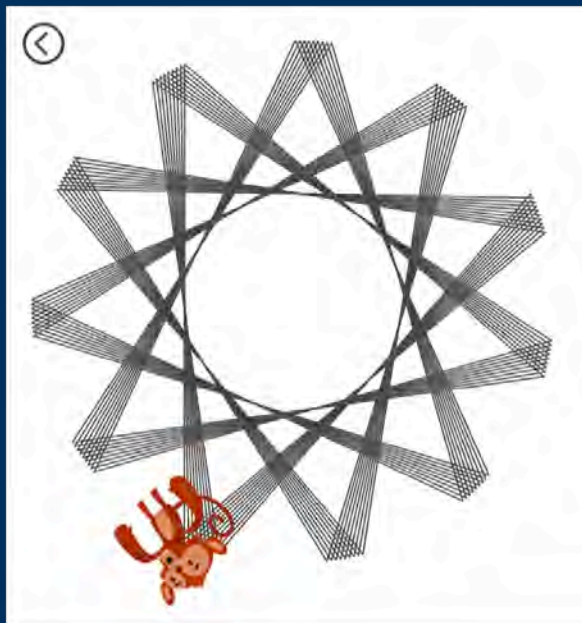
Square with loops



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Action

- Challenges – *polygons, loops, repeat function*
- Basic skills - *events, text...*
- Free Play





Action

Task: Create a picture book, that has a moral to it, to share with your buddy!

Step 3. Storyboard your ideas.

Step 4. Consider **how** you will **make** this in Hopscotch, by writing this on your storyboard in **RED** pen

Step 5. Show Mr Budd or Miss Stone.

Step 6. Start **making** on Hopscotch! Follow your plan!





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Story Books



"You would have not got such a scolding if you told the truth".



56



Timer: 22



SEE CODE



Today we will use an application called Hopscotch to program!

We will learn how to make a square.





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Collecting Data

- The data was analysed by comparing the surveys, reviewing the data, anecdotal notes, videos and work.





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Key Findings

- Enjoyed the free play & immediately interested
- Liked “everything” about the introductory lessons & had “fun controlling the mini creatures.”
- Flourished when challenged & shown the capabilities
- Skills were essential for the interactivity, creativity & open-endedness of story book
- Assisted each other & relished the opportunity to add complex features
- Rich learning experiences when they discovered & shared
- Had to be entirely creative independently
- Hopscotch is a suitable app to learn and teach basic coding to Year 4 students

*“Oh my god!
Look what
I’ve created!”*





What do you see
are the benefits of
using Hopscotch?

"You get to explore
and create new things."

"That people
can learn how to do
basic programming."

"It is very easy to
use and does not
include lots of hard
coding."

"Learning a
life skill."

"Everything, because
it's like a game."

Student reflections...

The boys were exposed to the limitless opportunities to be creative with Hopscotch and felt they could "think outside the box."

One student referred to the storybook "lesson as the most fun yet. I loved utilising my skills in a movie."



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Conclusions

- There was a breadth of complexities with the storybooks
- The boys felt they had been “creative” and “had fun whilst learning.”
- Many boys stated that Hopscotch was a “basic” coding program that was easy for “kids to use.” It is not surprising that one boy identified a benefit of Hopscotch as “learning a life skill.”
- The project fostered mathematical discussions, perseverance, problem solving, brainstorming, planning, sharing, collaborating, story writing, publishing, editing, fun, engagement & most importantly creativity.





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Questions?



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