WAGIN DISTRICT HIGH SCHOOL
SEMESTER 2, 2025 OUTLINE
Year 8 DIGITAL TECHNOLOGIES

COURSE OUTLINE

In Year 8, learning in Digital Technologies focuses on further developing understanding and skills in computational thinking, such as decomposing problems and engaging students with a wider range of information systems as they broaden their experiences and involvement in national, regional, and global activities.

YEAR 8 ACHIEVEMENT STANDARDS

At Standard, students identify methods of data transmission and security in wired, wireless and mobile networks and identify specifications of hardware components and outline apparent impacts on network activities. They identify how binary is used to represent data in digital systems. Students evaluate the authenticity, accuracy, and timeliness of acquired data and use a range of software to evaluate and visualise data. Students present diagrammatically and in English, their designs and plans for the user experience of a digital system, with sequenced steps. They predict output for a given input to identify errors. Students modify and implement digital solutions, considering the user interface within a programming environment and the need for user choice and/or repeating options. They work collaboratively online to create and communicate interactive ideas with consideration for social contexts.

In Digital Technologies, students investigate a given need or opportunity for a specific purpose. They evaluate and apply a given brief, using some examples. Students consider and select components/resources to develop solutions, identifying constraints. They use appropriate technical terms and technology to design, develop, evaluate, and communicate alternative digital solutions. Students develop sequenced steps to produce a simple, problem-solving plan. They apply safe and appropriate techniques to make solutions, using a range of components and equipment. Students independently develop contextual criteria to assess design processes and solutions. They work independently, and collaboratively, to plan, develop and communicate ideas and information when managing projects.

TIMELINE

TERM 3, 2025 - Year 8 DIGITAL TECHNOLOGIES

Wk	Focus **Pixar in a Box (Animation) – Term 3**	Assessments
1	**eSafety & Classroom Rules** Students revise how protect their online privacy and personal information that identifies them. Login in to DoE and Connect accounts.	Students change passwords. Send Connect message to teacher.
1	**Pixar in a Box** Pixar in a Box is a behind-the-scenes look at how Pixar artists do their jobs. Students will be able to animate bouncing balls, build a swarm of robots, and make virtual fireworks explode. **Unit 1: Orientation** Discover Pixar in a Box, a Pixar and Khan Academy collaboration that teaches the art and science behind Pixar movies. Explore the filmmaking process, from storyboarding to rendering, and learn how creativity and technical skills combine to bring animated films to life.	Submission of answers online in Connect class.
2	**Unit 2: The art of storytelling** What makes for a good story? Learn how a story's structure, characters, visuals, and cinematography contribute to a film's story, and how feedback helps to strengthen a film's storytelling. • We are all storytellers • Character • Story structure • Visual language • Film grammar • Pitching and feedback	Submission of written answers online in Connect class.
3	**Unit 3: The art of lighting** Without virtual lights, animated films would be as dark as a live action movie would be without actual lights. Pixar's Lighting Artists use light to support the emotion of the story and make the films look and feel believable. In this lesson students will learn about the properties of light and how different types of light sources are used to bring beauty, depth and emotion to Pixar films. • Introduction to lighting • The art of lighting	Submission of written answers online in Connect class. Completion of online computer simulation activities.
4	**Unit 4: Simulation** A believable world frequently contains objects that need to move in a realistic way, but are too complicated or numerous to move individually "by hand" - things like leaves on a tree or hairs on a monster's body. In this lesson, students will learn how Pixar uses computer programming to create believable simulated hair as seen in the film "Brave". • Hair simulation 101: Simulation • Code your own simulation: Simulation	Submission of written answers online in Connect class. Completion of online computer simulation activities.

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5	**Unit 5: Colour science** Just as dialogue, acting, and music are tools filmmakers use to convey meaning and emotion, colour can be used to the same effect. But determining "colour" is not as simple as saying "red" or "brown" because there are endless shades of colour in the visible spectrum. In this lesson, you will learn how colour is determined partly by the physics of light and partly by how our brains perceive it. • Introduction to colour • Colour spaces	Submission of written answers online in Connect class. Completion of online computer simulation activities.
6	**Unit 6: Virtual cameras** Just as live-action movies are made using cameras, Pixar uses virtual cameras to "film" their movies, with lenses that act like the real thing. In this lesson, students will experiment with different camera settings like F-stop, focal length and focus to create cool effects in scenes from "Inside Out." • How virtual cameras work • Mathematics of depth of field	Submission of written answers online in Connect class. Completion of online computer simulation activities.
7	**Unit 7: Effects** Pixar effects artists create explosions, fire, and water by breaking them down into millions of tiny particles and controlling them using computer programming. In this lesson, students will use basic physics to create mini-special effects like flowing water and exploding fireworks. • Introduction to particle systems • The physics of particle systems	Submission of written answers online in Connect class. Completion of online computer simulation activities.
8	**Unit 8: Patterns** To make the surfaces of characters or objects seem believable, artists at Pixar take basic patterns and use computer graphics to make those patterns more random. Students use randomness in this lesson, when they make their very own dinosaur skin! • Geometry of dinosaur skin • Painting with randomness	Submission of written answers online in Connect class. Completion of online computer simulation activities.
9-10	**Unit 9: Rigging** "Rigging" is what Pixar artists call the process that gives characters movement, and it's a crucial step in making them more realistic and human (even if they're not actually humans). In this lesson, students will get to use the same toolbox that Pixar uses to animate a desk lamp and make a snowman smile. • Introduction to rigging • Code a character	Submission of written answers online in Connect class. Completion of online computer simulation activities.
On-going	**EdAlive Typing Tournament** Touch typing lessons and practice.	Speed and accuracy tests after each unit. 1 drill per lesson.
On-going	**Effective use of Microsoft 365 Apps and saving work to OneDrive** Students to manage and safely use their school accounts in the Microsoft 365 environment. Also, to save their work for accessibility when working individually or collaboratively in online learning environments. All DoE email use is monitored. Students are to follow eSafety guidelines and use their email accounts appropriately.	Students can save work, access, and edit without assistance, while using their email appropriately. https://www.esafety.gov.au/

Grade allocation is 50% for Classwork and 50% for Assessment Tasks.

Dates and assessments are subject to change to meet the needs of the students and the teachers.

TIMELINE

TERM 4, 2025 - Year 8 DIGITAL TECHNOLOGIES

Wk	Focus **Pixar in a Box (Animation) – Term 4**	Assessments
1-3	**Unit 10: Animation** Whether it's hand-drawn or done using a computer, animation always has the same goal: to take a series of images and play them back in a sequence. At Pixar, computers help fill in the gaps in those sequences, using mathematical functions – and students will get to try this too, by animating a bouncing ball. • Introduction to animation • Mathematics of animation curves	Submission of written answers online in Connect class. Completion of online computer simulation activities.
3-5	**Unit 11: Environment modeling** When creating the virtual worlds that their characters live in, technical artists at Pixar look to the natural world for inspiration and mimic it using mathematical formulas. This lesson dives into the math that was used to create the landscapes in "Brave," starting with a single blade of grass. • Modeling grass with parabolas • Calculating parabolas	Submission of written answers online in Connect class. Completion of online computer simulation activities.
5-7	**Unit 12: Character modeling** To get Pixar characters to not look so "computer-y," artists turn to modeling, creating virtual 3-D shapes on the computer. To smooth those shapes out and make them look even more real, they use a simple algorithm called "subdivision." • Modeling with subdivision surfaces • Mathematics of subdivision	Submission of written answers online in Connect class. Completion of online computer simulation activities.
7-10	**Unit 13: Crowds** If you need to fill a scene with characters – a school of fish, a mob of monsters, or a cast of robots – students need to design a bunch of simple body parts that can be combined in different ways. Try making their own robot from parts – and share it! • Building crowds • Counting crowds	Submission of written answers online in Connect class. Completion of online computer simulation activities.
On-going	**EdAlive Typing Tournament** Touch typing lessons and practice.	Speed and accuracy tests after each unit. 1 drill per lesson.
On-going	**Effective use of Microsoft 365 Apps and saving work to OneDrive** Students to manage and safely use their school accounts in the Microsoft 365 environment. Also, to save their work for accessibility when working individually or collaboratively in online learning environments. All DoE email use is monitored. Students are to follow eSafety guidelines and use their email accounts appropriately.	Students can save work, access, and edit without assistance, while using their email appropriately. https://www.esafety.gov.au/

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