# Project Firestorm

Project Firestorm is a STEM unit of work developed by Stage 3 teachers at St Ives North Public School. This integrated study addresses an authentic problem for the school surrounded by bush land, directly adjoining the Ku-ring-gai National Park. The unit is the final learning sequence in a Stage 3 geography study focusing on [Factors that Shape Places](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/learning-areas/hsie/geography-k-10/content/1183): How can the impact of bushfires on people and places be reduced?

* 2016 – initial project developed and delivered – a general lack of awareness was evident concerning the dangers associated with bushfires and the relative threat to the area – St Ives North Public School formed a working alliance with NSW Rural Fire Service (RFS)
* 2018 – project was revised and re-delivered
* 2020 – revision – updated syllabus outcomes and resources; identified alignments (where appropriate) with the RFS interactive [Project Firestorm](https://www.projectfirestorm.com.au/) online version

## **Unit overview**

Project Firestorm develops student understanding of the management of environments and how people influence the places in which they live with a focus upon bushfires in their local area. Students are challenged to generate solutions to preparation, survival and recovery from a catastrophic bushfire event. Students learn design thinking processes and develop scientific and mathematical thinking skills whilst developing a solution for their driving question. Students may have a basic understanding of coding, robotics, 3D modelling and electrical circuitry, although these understandings are not mandatory.

## Outcomes

Science and technology

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| **Skills and strands** | **Outcomes** |
| Working scientifically | ST3-1WS-S: plans and conducts scientific investigations to answer testable questions, and collects and summarises data to communicate conclusions |
| Design and production | ST3-2DP-T: plans and uses materials, tools and equipment to develop solutions for a need or opportunity |
| Living world | ST3-4LW-S: examines how the environment affects the growth, survival and adaptation of living things |
| Material world  | ST3-7MW-T: explains how the properties of materials determines their use for a range of purposes |
| Earth and space | ST3-10ES-S: explains regular events in the solar system and geological events on the Earth’s surface |
| Digital technologies | ST3-11DI-T: explains how digital systems represent data, connect together to form networks and transmit data |

Mathematics

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| **Strands**  | **Outcomes** |
| Working mathematically | MA31WM: describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions MA3-2WM: selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations MA3-3WM: gives a valid reason for supporting one possible solution over another |
| Number and algebra | MA3-8NA: analyses and creates geometric and number patterns, constructs and completes number sentences, and locates points on the Cartesian plane |
| Measurement and geometry | MA3-9MG: selects and uses the appropriate unit and device to measure lengths and distances, calculates perimeters, and converts between units of length MA3-17MG: locates and describes position on maps using a grid-reference system |
| Statistics and probability | MA3-18SP: uses appropriate methods to collect data and constructs, interprets and evaluates data displays, including dot plots, line graphs and two-way tables |

HSIE

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| **Syllabus** | **Outcomes** |
| Geography | GE3-2: explains interactions and connections between people, places and environmentsGE3-3: compares and contrasts influences on the management of places and environmentsGE3-4: acquires, processes and communicates geographical information |

English

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| **Strands**  | **Outcomes** |
| Speaking and listening | EN3-1A: communicates effectively for a variety of audiences and purposes using increasingly challenging topics, ideas, issues and language forms and features |
| Writing and representing | EN3-2A: composes, edits and presents well-structured and coherent texts |
| Reading and viewing | EN3-3A: uses an integrated range of skills, strategies and knowledge to read, view and comprehend a wide range of texts in different media and technologies |
| Reflecting on learning | EN3-9E: recognises, reflects on and assesses their strengths as a learner |

Personal development, health and physical education

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| **Strands**  | **Outcomes** |
| Health, wellbeing and relationships | PD3-2: investigates information, community resources and strategies to demonstrate resilience and seek help for themselves and others |
| Healthy, safe and active lifestyles | PD3-10: selects and uses interpersonal skills to interact respectfully with others to promote inclusion and build connections |

Creative arts

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| **Strand**  | **Outcome** |
| Visual arts: making | VAS3-1: investigates subject matter in an attempt to represent likeness of things in the world |

## Teacher resources

* [Bushfires 1: Understanding bushfires](https://www.science.org.au/curious/bushfires) – Australian academy of Science
* [Bushfire – an anthology of poems](https://www.abc.net.au/radionational/programs/archived/poetica/2012-07-28/4112790) – ABC National
* [Bushfires: A Geography resource for Australian students](https://www.gtav.asn.au/documents/item/153) – Geography teachers Association of Victoria
* [Design Thinking](https://schoolsequella.det.nsw.edu.au/file/ba43743b-baca-4dd2-9689-2da09ad2ffc7/1/design-thinking-across-the-curriculum.zip/index.html#/)
* [Empathy map](https://dschool-old.stanford.edu/groups/k12/wiki/3d994/Empathy_Map.html)
* [Project Firestorm](https://www.projectfirestorm.com.au/) –RFS interactive version

### Student STEM journal:

Every student will keep a STEM journal in which they will record their group and individual interaction, ideas, drawings and reviews.

## Assessment overview

* Pre-assessment of general bushfire knowledge
* Completed tasks compiled and reviewed in STEM journal
* Peer/self-assessment of student projects using student created rubric and success criteria

## Learning sequence 1

### Pre-test

Choose from one of the following tasks (retain in STEM journal):

* 1. create a plan for a bushfire at your house
	2. record a concept map with bushfires in the centre
	3. complete a ripple chart – what if a bushfire hit our community?
	4. develop a Know/Want to know ‘chart.

### RFS visit

**This learning sequence aligns with the program support within the teacher section in the RFS interactive** [Project Firestorm](https://www.projectfirestorm.com.au/mission/level-3)

Task 1 – Project Firestorm launch

* Prior to local RFS visit, students brainstorm the impact of bushfires by watching [Bushfire Season (3:39)](https://www.abc.net.au/btn/classroom/bushfire-season/11505884)
* Local Rural Fire Service visit the school to launch the project; spoken presentation focusing on role of the RFS; provide time for students to ask the volunteers questions.
* If RFS not available, watch [Volunteering in the NSW Rural Fire Service video (3:01)](https://www.youtube.com/watch?v=51tRloDwPko&feature=youtu.be)
* In class, discuss the role of the RFS in preparing for and fighting fires.

#### **Task 2 – Project launch follow up**

Students conduct preliminary research by watching [Australia Firestorm 1 of 4 - BBC My Country Documentary (10:58)](https://www.youtube.com/watch?v=UMmGE5RNrR4) about the Black Friday fires in Victoria in 2009, then create a bushfire infographic using an online design tool.

##### **Significant information and research guiding questions**

* What did the fire authorities know from the past?
* What are the factors that influence bushfires mentioned in the video?
* What fuels the fire?
* What is a convection column?
* How does radiant heat cause fire damage?
* What is the fire line intensity rating?
* What is a burn over?
* What choices do people make?
* What is the different culture?
* When people stayed, what were their concerns?
* Half a million hectares were burned. What is that in square kilometres? What countries are that size?
* No man could stop the force of nature. What were the evacuation numbers? Was it possible to evacuate the entire population?

#### **Task 3 – Visual arts inspired by fire**

Explore events, shapes, movement, colours and patterns of fire as inspiration to create artworks and build empathy.

* Create a flame shaped clay vase – link to science and mathematics – clay in a kiln is fired to a temperature of 1100℃; water is converted to steam at 100℃.
* Observe Van Gogh - [Starry Night - interactive animation (4minutes 30 seconds)](https://vimeo.com/36466564) and link movement of clouds to movement of fire; translate night scene to bushfire scene
* Observe work by Aboriginal artists such as Clifford Possum Tjapaltjarri and Ronnie Tjampitjinpa and create an artwork in their style.

#### **Task 4 – Poetry**

Watch documentary on preparing for fire [When the Fire Comes (1:04:19s)](https://www.youtube.com/watch?v=XbYI5dDlMeg)

* identify feelings, thoughts and attitudes of the victims.
* listen to [ABC Bushfire poetry (35:59)](https://abcmedia.akamaized.net/rn/podcast/2012/07/pca_20120728_1505.mp3)
* write Haiku, acrostic or free verse
* write poetry that expresses the feelings of the people who had to prepare and then either stayed or left the bushfire area.

## Learning sequence 2

### Developing empathy

**This learning sequence aligns with Mission 1 in the RFS interactive** [Project Firestorm](https://www.projectfirestorm.com.au/mission/level-3)

#### **Task 1 – Introduction to design thinking**

Explicitly introduce the 6 key phases of [design thinking](https://schoolsequella.det.nsw.edu.au/file/ba43743b-baca-4dd2-9689-2da09ad2ffc7/1/design-thinking-across-the-curriculum.zip/index.html#/) – empathise, define, ideate, prototype and test.

Discuss with students their understanding of bushfires and how this has grown over the past two weeks:

* review understanding of how bushfires impact on people and their lives
* Why do you think it is important to build empathy and understanding when trying to design solutions to another person’s problems?

#### **Task 2 – Create an empathy map Identifying needs and wants**

Students identify the needs and wants of those effected by bushfires using the design thinking strategies of interviewing, observation and immersion.

Choose from a selection of stimuli below:

* [When the Fire Comes (1:04:19)](https://www.youtube.com/watch?v=XbYI5dDlMeg) (2009 Victorian – Black Saturday fires), people interviewed after a fire.
* [Return to Dunalley - a family's survival story, six months on (6:08)](https://www.abc.net.au/7.30/return-to-dunalley---a-familys-survival-story-six/4766826), children huddled under a bridge with their grandparents in the Tasmanian bushfire
* [Bushfire recovery (4:26)](https://www.abc.net.au/btn/classroom/bushfire-recovery/10525352), review of children’s needs after a bushfire
* [ABC Black Saturday mosaic,](https://www.abc.net.au/innovation/blacksaturday/#/stories/mosaic) hundreds of people share their stories and experiences of the fires.

In small groups, students create an empathy map (see resource list above) to gain deeper insight into particular families and the issues they faced.

* Split large butcher’s paper into 4 quadrants
* Label the 4 quadrants: say, do, think, feel

Under each quadrant students place sticky notes:

* say – direct quotes and key phrases or words that resonated with them
* do – drawings/diagrams or details of what actions the families took
* think –direct quotes from the families that begin with ‘I think…’ or ‘I believe’ and also inferred thoughts and beliefs
* feel – specific feelings and emotions observed or heard throughout the families’ stories.

As a class, compare and analyse the stories and the decisions the families made.

##### Suggested questions related to perspectives and increasing empathy

* Why did people leave/stay?
* Were some reasons different to others?
* Were people at different phases of their lives?
* Did some people have more to lose by leaving?
* Do you think there may have been a better solution?
* How would you have handled….?
* How would you feel if…?
* What do you think about….?

#### **Task 3 – Interview with a community member**

Invite a community member who has experienced a bushfire to visit the classroom and tell their story.

Students

* listen courteously
* ask questions with respect
* record information to add to the empathy map in the areas of think, feel, say and do.

#### **Task 4 – Mathematics: cold light of day, analyse the aftermath**

* individually or in groups, students research data on significant Australian bushfires
* using a spreadsheet such as Google Sheets or Office 365 (or using grid books), students complete the table by selecting suitable methods for gathering data and information from reliable secondary sources
* students use data to produce bar or column graphs to analyse the aftermath of the bushfires, accurately recording data using digital technologies.
* students give a valid reasons for supporting their conclusions regarding the relative risks within bushfire scenarios

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| **Fire event**  | **Maximum temperature**  | **Hectares burnt** | **Properties lost** | **Fatalities** | **Economic cost** |
| Gippsland and Black Sunday 1926 |  |  |  |  |  |
| Black Friday 1939 |  |  |  |  |  |
| Black Tuesday Tasmania 1967 |  |  |  |  |  |
| Ash Wednesday 1983 |  |  |  |  |  |
| Black Saturday 2009 |  |  |  |  |  |
| Red October NSW 2013 |  |  |  |  |  |
| 2019/2020 Australia |  |  |  |  |  |

#### **Task 5 – Science and technology – adapting to our land**

Students will explore seasonal adaptations and how Aboriginal and Torres Strait Islander peoples adapt to, manage and change the land for their own survival and needs.

* discuss eucalyptus plants and the evolution of the arid land
* explore the Aboriginal use of [firestick](http://www.kooricountryfiresticks.com.au/home.html) or cultural burn technology to appreciate first people management of the land
* understand management strategies of [prescribed burning,](https://youtu.be/PT48gLPOxdA) [fuel and fuel types](https://youtu.be/kEHspanF_G0), [evidence of prescribed burn](https://youtu.be/gPt4Qr_7ExQ) in Western Australia
* explore the [seasonal adaptations](https://www.abc.net.au/btn/classroom/indigenous-seasons/10522128); how Aboriginals adapted to and changed the bushland

## Learning Sequence 3

### Define the driving question

**This learning sequence aligns with Mission 2 in the RFS interactive** [Project Firestorm](https://www.projectfirestorm.com.au/mission/level-3)

#### **Task 1 – introduce the driving question**

 **How can our community prepare for, survive or recover from a catastrophic bushfire event?**

Review the design thinking phases and focus on define.

Students consider the driving question, making comparisons to their local area as they watch [Behind the News: Bushfire Disaster (4:55)](https://www.abc.net.au/btn/classroom/bushfire-disaster/10539788)

* Review the driving question - focus on the verbs to define issues related to ways that the local community could prepare, survive or recover.
* Prepare a large sheet of butcher’s paper, divide into 3 columns with the headings Prepare, Survive, Recover.
* Students in pairs, write their ideas and knowledge onto sticky notes and place them under the correct column. Display charts on an ideas wall. With guidance, students identify practical problems to inform a scientific investigation. Examples may be:
	+ Prepare – equipment, buildings, plants, back burning, clearing
	+ Survive – exit route, preparation, access to services
	+ Recover – access to services, resilience, rebuild, repair

#### **Task 2: challenge the assumptions with the 5 Whys strategy**

Teachers question the students’ ideas and challenge their assumptions.

For example the stated problem may be: People died in a bushfire because the RFS did not come quickly enough.

1. Ask ‘Why’? Why didn’t the RFS come quickly enough?

Answer: Because they could not get through the traffic.

1. Ask ‘Why’? Why couldn’t they get through the traffic?

Answer: Because too many other people were on the road.

1. Ask ‘Why’? Why were too many other people on the road?

Answer: Because they left just as the fire arrived.

1. Ask ‘Why’? Why did so many leave just as the fire arrived?

Answer: Because they became frightened and panicked.

1. Ask ‘Why’? Why did they become frightened and panic?

Answer: Because they did not prepare their properties or have a fire plan.

Students understand that a totally different solution is required to the original assumed problem.

#### **Task 3: Mathematics – Angles and a fire path**

Discuss with students the effect of wind change on a fire: direction, speed. Watch RFS video: [How fast do grass fires spread?](https://www.projectfirestorm.com.au/mission/level-2/how-to-stop-fires-spreading/how-fast-do-grass-fires-spread) (43 seconds)

In pairs or individually, students complete 3 tasks

* **Angle drawing**
	+ **Students measure the size of the angles in degrees, record and label the kind of angle and the degrees**
* **Fire danger rating**
	+ **Students measure and recreate the** [fire danger rating semi-circle](https://www.rfs.nsw.gov.au/plan-and-prepare/fire-danger-ratings)
	+ **Mark the points where each category starts and stops**
	+ **Discuss: why do you think the catastrophic section looks larger?**
* **Map fire path**
	+ **Students measure the acute and reflex angles in the fire path shown**
	+ **Students draw the path of the fire then measure the acute and reflex angles in the path**
	+ **Students design their own fire path which needs to have at least x amount of turn starting from the start and finishing at the end.**

#### **Task 4: Science and Technology - how fires behave**

**Students will**

* **investigate the relationship between the topography of the local area (particularly inclines and declines) and environmental conditions such as temperature, fuel density, leaf litter and humidity, in order to predict the severity and behaviour of bushfires under varied conditions.**
* **observe and record using a mobile recording device a teacher demonstration: For example** [Matchstick bushfire demonstration (log in to Project Firestorm)](https://www.projectfirestorm.com.au)
* **review the student recording to analyse fire behaviour including the variables of incline, decline and time**
* **check student observations and measurements by replaying and comparing with partners.**

## Learning Sequence 4

### Ideate: creative thinking techniques

**This learning sequence aligns with Mission 3 in the RFS interactive** [Project Firestorm](https://www.projectfirestorm.com.au/mission/level-3)

#### **Task 1 – introduce ideate**

* Review the design thinking phases and focus on ideate.
* Discuss with the students the term ideate and its meaning: to form ideas, to think.
* Re-visit the driving question and the initial ideas wall with a focus on the three stages of prepare, survive and recover. Refer also to the needs identified on the empathy map.
* Discuss: how would others see the situation differently? Who is involved?
* Prompt: What new ideas do we have that will meet the needs?

Introduce the Crazy 8 design thinking strategy.

Students:

* fold an A4 sheet of paper into 8 sections (half, half and half again)
* select an aspect of the problem to focus on
* draw, write, label one solution to this problem on a sector of their paper in 60 seconds
* share for 30 seconds with a partner
* repeat this process 7 more times
* at the end of the eighth, students share their most successful idea with a larger group

Provide freedom to explore a range of possibilities, brainstorm solutions without being judged, wild and wacky ideas are to be encouraged.

Alternatively, [Brainstorming with Rules](https://dschool.stanford.edu/groups/k12/wiki/d3f14/Brainstorming_with_Rules.html) and [Visual Brainstorming](https://dschool.stanford.edu/groups/k12/wiki/7d9d7/Visual_Brainstorming.html) are possible strategies to elicit ideas and drive energy of the session.

#### **Task 2: form project teams**

Form groups of 3 to 5 students. The structure of the groups is open, however, consider

* common interests
* preferred tasks
* [jigsaw](https://www.jigsaw.org/) classroom
* [mantle of the expert](https://www.mantleoftheexpert.com/what-is-moe/introduction-to-moe/)

Students will:

* document their group’s progress using Microsoft Planner (access through Student Portal) – students create a new plan, share with group members and teacher/s, organise and assign tasks, share files, chat about what they are working on, and get updates on progress
* assign specific roles to each member such as engineer, architect, designer, materials scientist, bushfire consultant, researcher
* develop an authentic approach to the task by forming companies and generating products such as a business name, logos, cards, letterhead.

#### **Task 3 – complete a group rubric**

In project teams, students collaborate and complete a 4 level rubric for success that addresses these identified explicit quality criteria:

* Presentation – quality and professionalism
* Presentation – consistency of format including team logos, colour palettes
* Presentation – evidence of planning
* Product – deliverable objects
* Product – functionality
* Product – real-world application
* Originality of idea
* Team work
* Follow and achieve own success criteria
* Knowledge integration – application of learning into solution

#### **Task 4: research and project solution**

It is anticipated that this phase will be ongoing over a number of weeks as groups continue to ideate, prototype and test their ideas.

 Students will

* focus on their role in the group research and locate information that is relevant to their solution
* create, share and discuss ideas with group.

This phase will require a high degree of teacher guidance in order to encourage students to continually analyse their research findings, assumptions and design proposals.

#### **Task 5: Science – insulate or perish**

Discuss with the students their local urban interface: where the bushland and housing intersects. Locate home or school on [Six Maps](file:///D%3A%5Cmaps.six.nsw.gov.au), then measure the distance, using the distance tool, to the closest bushland environment.

Investigate the thermal properties of various common materials used in housing in order to determine their suitability in the construction of housing in bushfire prone regions.

Students will:

* test sample materials under supervision, to determine their relative thermal insulating properties using thermal datalogging equipment such as [Lego Mindstorms](https://youtu.be/tSJz0TgGAyg) (3:33)
* place sample materials on insulating tiles to lift them (5mm) above a heated hot plate (minimum setting 60 degrees). Use samples commonly found in house environments; all of a similar size: fabric, foil, paper, timber, metal, cardboard, fibre cement sheet, tin, soil (clay), rocks
* use a timer to record the change in heat of the sample over a set time period (60 -120 seconds).
* explore concepts of insulation, reflection, absorption, radiance, convection and conduction of heat
* examine charted results to explain and determine which materials are better insulating materials for building heat resistant dwellings
* evaluate samples and decide which materials are effective at slowing the transmission of heat inside the home.
* Ask students:
	+ Why are houses so susceptible to bushfires? Use the 5 whys to understand the real problem
	+ How can housing be improved?
	+ Why do we build houses in fire zones?
	+ Do we have adequate fire regulations to protect loss of property?
	+ How could we improve fire safety for housing?

#### **Task 6 – extreme evacuation**

* Download [Extreme Evacuation](https://www.projectfirestorm.com.au/teacher-resources/teacher-resources) (log in to Project Firestorm) as a guide for exploring the issues associated with an emergency evacuation of the local area.
* Students watch [Spark: a better way to predict the spread of bushfires](https://education.abc.net.au/home#!/media/2163917/spark-a-better-way-to-predict-the-spread-of-bushfires) (2:10)
* Students will be challenged to combine a range of mathematical skills and logical reasoning to determine the issues involved in moving large numbers of people out in a short amount of time. Students are required to draw conclusions and provide explanations based on data and information gathered from first-hand or secondary sources.
* This task integrates the mathematical concepts of area, averages, length, percentages, position and mapping.

## Learning Sequence 5

### Prototype: design development

**This learning sequence aligns with Mission 4 in the RFS interactive** [Project Firestorm](https://www.projectfirestorm.com.au/mission/level-3)

#### **Task 1 – creating prototypes**

Groups focus on testing ideas and making rapid prototypes, seek feedback on their prototypes, synthesize and integrate feedback and identify what is ultimately needed for their solution to move towards its final iteration. Students may use a number of strategies including:

* Paper prototyping
* [Role playing](https://dschool.stanford.edu/groups/k12/wiki/fbba9/Role_Playing.html)
* [Prototype to decide](https://dschool.stanford.edu/groups/k12/wiki/e48a0/Prototype_To_Decide.html)

This phase may

* vary greatly by group depending on the problem to be solved
* include schematics, sketches, rapid paper models, flowcharts, wireframe models, written explanations and computer simulations
* require students to move back and forth in the design thinking phases, interrogating their decisions at key moments along the way

Review scaffolding questions – monitoring

* What have you accomplished so far?
* What is your next step?
* What do you still need to know, understand and do about the task/project?
* Have you made any mistakes?
* Did you recover from an error? How did you do that?
* How can you continue to motivate yourself to remain on task?

#### **Task 2 – Expert visit from the RFS**

The NSW RFS staff make a return visit to the school to be a critical friend and expert for the students. The RFS staff will visit each class for approximately 60 minutes to listen to the students’ ideas and provide support and critical feedback.

From their first-hand knowledge base, the NSW RFS staff may take students back to their empathy maps to identify things that students have missed.

Students will:

* present their initial problem/solutions to the class and the RFS experts with an introduction to their company (if relevant)
* pitch their ideas with evidence of its relevance, its innovation and its ability to solve an authentic problem
* receive feedback with respect and gratitude
* ask any clarifying questions regarding improvements or modifications

#### **Task 3 – Mathematics – angle of attack**

Download [Angle of Attack](https://www.projectfirestorm.com.au/teacher-resources/teacher-resources) (Project Firestorm log in) as a guide for exploring the relationship between fire, wind speed, inclines and declines.

Students will:

* calculate the effects of slope and wind speed on the spread of bushfires
* use measurement data from topographical maps of the local area from Google Earth.

## Learning Sequence 6

### Test – design finalisation and production

Students will:

* present their final conceptual ideas to their peers and review their learning to date in their STEM journal
* re-visit and review their rubric and success criteria
* plan their next steps ready for production of their final products
* consult with expert teachers in technical, scientific or creative aspects of their design solutions
* consolidate final designs and produce associated material in preparation for presentation and display showcase
* prepare models and products

## Learning Sequence 7

### Presentation and Showcase

**This learning sequence aligns with Mission 5 in the RFS interactive** [Project Firestorm](https://www.projectfirestorm.com.au/mission/level-3)

Students will

* articulate the processes they went through to create their solution
* demonstrate and share their understanding of the links to key learning areas throughout their STEM learning journey
* present final designs to client (NSW RFS)
* present projects in a showcase for parents and peers
* present projects to the wider-school community in an open-afternoon.

Students will be producing a range of solutions to problems related to preparing for, surviving or recovering from bushfires. Students may present in a variety of forms:

* STEM journals with notes and photos
* schematics, design sketches and detailed drawings
* information posters or digital presentations using software such as Keynote, PowerPoint, Google Slides
* digital simulations
* 3D CAD models
* cardboard or foam core scale models
* 3D printed models
* robotic solutions
* electronics, sensors and ICT interfaces
* interactive websites and apps
* dioramas
* video and multimedia products
* technical reports and support materials.

**This learning event aligns with the Commissioner’s Award in the RFS interactive** [Project Firestorm](https://www.projectfirestorm.com.au/mission/level-3)

Note – All outcomes referred to in this unit come from:

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