Cedar, Cherry, Rowan
What Price Progress?

Lesson	IPC Learning Goal	NC Coverage	Activities	Resources / Vocabulary / Personal Goals
Entry Point			**What is an invention?** As a class discuss what this means. Give examples and brainstorm. **Dragon's Den** The children will bring in junk modelling/recycling resources. Using the junk modelling, create a product with a purpose to present to the rest of the class. The children can choose … • A hat for all seasons • A gadget to make it easier to eat spaghetti • The perfect school bag that carries everything • A machine to feed a pet • A gadget that cheers you up when you are sad • A machine for practising sports skills • A hat for all seasons • A gadget to make it easier to eat spaghetti • The perfect school bag that carries everything • A machine to feed a pet • A gadget that cheers you up when you are sad • A machine for practising sports skills • A machine to stop you falling asleep in class • A machine to stop you falling asleep in class	A selection of recyclable/construction materials – boxes, cardboard tubes, straws, motors, wheels and axles, paper cups, wood, old clothing, fabric swatches, springs, elastic bands, paper clips, newspaper, etc

			The children will work in small groups. They will create their new invention and then present it in a Dragon's Den style.	
Knowledge Harvest			**What is 'Progress'?** Have the word progress. What does it mean? What does it look like? The children will discuss 'progress' and as a class make a list of what it is. Record as many ways they can think of that relate to making progress on an individual, group and country level.	
Big Picture			Advances in science and technology are transforming the way that we live our lives. This is nothing new, but technology is developing more rapidly than ever before. Is technology essential to the way we live today? Is there any negative impact from developing new technologies?	
Technology T1	Know that technology affects people's lives.	Investigate and analyse a range of existing products	Ask 'What technology do we have in school?' TTYP Brainstorm and make a list. Ask 'Why do you think the technology is there? How does it help us?' What technology do you have at home? TTYP Share ideas. Is there different technology in different rooms in your house? The children will sort the different types of technology at home, ie, by rooms, use etc.	Pictures of technology Word bank
Technology T2	Understand the ways in which technology can be used to meet needs, wants and opportunities	Investigate and analyse a range of existing products	Make a list of all the technology that you can think of, which is used in our country/local area. Record their ideas under category headings. For example: travel, leisure, work, environment and so on. Choose an activity from everyday life, such as washing clothes, contacting a friend or cooking	Word bank

			a meal, and record all the technology that they would (or could) use to perform that task. Next to each item of technology, ask them to list the pros and cons of using that technology. Then ask the children to map out the same activity without using technology. Again, what would be the pros and cons?	
Technology T3	Evaluate the effectiveness of simple products in everyday use	Investigate and analyse a range of existing products	Look at some products, ie, calculator, mobile phone, ipads, kindles, DS etc. If possible have a variety of the same product. As a whole class, work together to decide on a list of criteria to assess the different products. If you wish, you could introduce children to the CAFEQUE system: • Cost – How much does it cost? Is it good value for money? • Aesthetics – Is it attractive? What features of the design make it so? • Function – What does it do and how does it work? • Ergonomics – How easy or comfortable is it to use? • Quality – How well is it built? What materials have been used? • User – Who is it for? Does it meet their needs? • Environment – Is the product eco-friendly? What effect does the product's manufacture, use and disposal have on the environment?	
Technology T4 and 5	Respond to identified needs, wants and opportunities with informed designs and products	generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	Ask the children to rank the criteria based on what they think are the most essential to a customer. For example: are aesthetics more important than quality? Would a customer be more concerned about the environment or the cost of an item? Encourage the children to discuss and	

			debate their choices before arriving at their final list. Discuss any differences of opinion. Is it likely that different customers will have different values? Do the children think that producers and manufacturers have those same values? Does it depend on the product? DESIGN A NEW PRODUCT	
Technology T6	Work with a variety of tools and materials with some accuracy	select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities	The children will be building their products based on their previous designs. Allow the groups to choose from a wide range of materials and components (including construction kits, motors, sensors, gears, levers, and so on) according to their functional and aesthetic suitability for the job. The children will also need to consider the tools they are going to use, e.g. equipment for accurately cutting, shaping, joining and finishing their products. Encourage experimentation and allow the opportunity for groups to share their findings and techniques with other groups. More complex models or structures may require strengthening. Identify any weak joints and weight bearing parts. What methods or materials can be used to reinforce the products? Consider the different ways in which structures are supported and the suitability of each method for a given product.	Construction/Modelling resources Tools
Technology Extension Task	Know that technology has affected people's lives over time.	understand how key events and individuals in design and technology have helped shape the world	Ask the children to choose an everyday piece of technology, such as the home computer, a calculator, a vacuum cleaner, a DVD, a mobile phone and so on, and trace it back through time. They may also discover why some designs and inventions didn’t catch on with the public. From their research for this task, the children should be aware of a continuing chain of	

			technological development and how technology in the past shapes technology in the future. Use the internet to find out about the creator/inventor for their chosen technology. What are its origins? Who was the original inventor/creator? How has the technology changed at each stage in its development? Encourage the children to find images and information and create a timeline charting the history of the technology.	
Art T1	Communicate through visual and tactile forms	about great artists, architects and designers in history.	Look together at examples of Futurist art. Explain that **'Futurism'** was an art movement that originated in Italy at the beginning of the 20th century. It took its inspiration from change and progress – celebrating the speed and technology of the machine age. **Olga Rozanova** **Filippo Marinetti** **Umberto Boccioni** **Giocomo Balla** Look at some of the art works of these Artists. The children should then record their initial ideas for their own Futurist painting in their sketch books so that they can review and revisit these ideas later. They need to decide on what they are going to paint: what aspect of technology, time and motion are they going to focus on? Whether they will use oils, water colour, acrylics or pastels, and what techniques they will use. They should research and try out techniques in their sketch books before starting their painting.	Examples of artists works
Art T1 Part 2	Use a wide variety of materials, forms and techniques to express	to improve their mastery of art and design techniques, including drawing, painting and sculpture	Provide access to a range of art materials for the children to create their artwork. You need to	Oil pastels, paints, pencils,

	their emotions, observations and experiences.	with a range of materials [for example, pencil, charcoal, paint, clay]	guide the children towards mastering their painting skills through various media. They should think of a title for their painting and write a brief description to be displayed alongside it to explain why they have chosen particular subjects, colours, shapes and patterns, and what they were trying to achieve in their painting.	
Art T2	Communicate through visual and tactile forms	about great artists, architects and designers in history.	Share some examples of Dadaist art. Explain that Dadaism was an art movement that started during the First World War. It was a reaction to how some people were feeling about what was happening at the time. They had lost their faith in technology and felt that modern life had failed them. Therefore the Dadaists created art that rejected technology and modernism, and made fun of past beliefs in progress and change. **Marcel Duchamp** **Raoul Hausmann** **Jean Arp** **Hannah Hoch** Look at these Artists and their works. The children can use the pieces of paper etc, to create a comment (or an opinion) about the use of technology in today's society. For example, they might want to say they love technology, 'technology is king! Or, like the Dadaists, they may want to reject technology and the change that comes with progress. As well as encouraging their creativity in this task, you also need to develop the children's skills in drawing, painting and sculpture using a range of materials, e.g. pencil, charcoal, paint and clay. Watered-down paint and ink can then be applied over sections of the collage to add further colour and interest.	Examples of Artists works Cinema tickets, covers from CDs and DVDs, calendars, envelopes and stamps, cuttings from newspapers, advertisements, photos, food wrappers, product packaging and so on.

Art Extension Activity	**Communicate through visual and tactile form**	to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]	Challenge the children to use art to represent their feelings about progress. Prompt them to think about how they will use shape, texture and colour to communicate their ideas to the viewer.	The finished pieces can then be displayed for other children to view and comment on.
History/Society 1/2	**Be able to place the events, people and changes in the periods they have studied into a Chronological framework.**	They should note connections, contrasts and trends over time and develop the appropriate use of historical terms. They should regularly address and sometimes devise historically valid questions about change, cause, similarity and difference, and significance.	Ask the children to work in groups to research one theme of everyday life in the home or host country. Focus on broad themes, such as: Transport Health/medicine Technology • Provide access to reference books and the internet for the children to perform their research. • Encourage them to find out about: • The key inventions and discoveries • Early designs and prototypes • What made these inventions and discoveries important • Where these developments took place • The men and women who were responsible • How these ideas/inventions were developed over time • How and when the development influenced this country The groups should organise their work on a chronological timeline, which they can then use for reference during the recording session.	Each group to present their time lines to the class explaining their findings.
International	**Be able to explain how the lives of people in**		On a large sheet of paper, ask the children to draw themselves in the middle. Then ask them	Table top gallery. Share with the rest of the class.

	one country or group are affected by the activities of other countries or groups		to produce a diagrammatic 'action plan' to show how they could change their lifestyle, in small ways, to be sustainable. Some ideas might include: • To buy local fresh fruit and vegetables rather than imported foods • To walk or cycle rather than to drive • To turn off lights when they leave a room • To buy products in packaging that can be recycled • To buy local products rather than imported ones • To share equipment rather than buy one for each person • To cooperate with others, rather to compete with others Discuss the consequences of some of the proposed actions. Who would benefit and who would not from changing lifestyles? They should also consider the effect on the environment and nature. 	
Science	**Understand how Scientists impact lives.**	Know about famous scientists??	**Stephen Hawking** **Isaac Newton** **Albert Einstein**	Children to showcase their newspaper front covers to

			Marie Curie Children to answer questions related to their scientist using information provided. Children to look at the information about their scientist and fill in the boxes. Once they have done this, they are to create a newspaper front cover about their scientist. (see instructions) Q: What is his name? When was he born and when did he die? What nationality was he? What is he famous for? What other facts are there about him?	the rest of the class using a table top gallery.
Exit Point **Dragon's Den**			We are going to hold a 'future exhibition' for our friends and family, celebrating the science and technology that will shape our future. Plan and design your exhibition. What exhibits and displays will it have? How will these be presented? Challenge the children to consider how they can use existing technology to share their learning. As part of the exhibition, children could build prototype models of their 'future technology' designs and create a 'trade show' presentation to show off its features and applications. Also encourage children to think about the issues that they have studied, related to invention and progress. How can they make others aware of these issues?	

			One group may want to work on a multimedia presentation, which will present key facts and issues to the audience in a visual and interesting way. Once your exhibition is complete, invite friends and family to explore the show.	
Reflection			Repeat Knowledge Harvest and Quiz. Complete reflection on learning. **(Teacher Assessment)**	