Design Your Dream Playground

STEM Project

NOTE: The following is only a guide and can be adapted to suit the needs and abilities in your class.

Through playful learning, children can engage in this open-ended project covering a wide range of curricular subjects and areas as well as skills.

This project covers the following;

- ***Science****: Design & make/Energy & Forces/ Environmental Awareness/Materials*
- ***Maths****: Measure/ Shape & Space/ Number/Algebra*
- ***Engineering****: Research, Explore, Design, Make, Modify, Evaluate*
- ***Technology****: Recording audio/ Taking photos/ Adobe Spark / Seesaw/Windows Video Editor*
- ***Visual Art****: Drawing / Construction*
- ***English/Gaeilge****: Oral Language/ Writing*

Task

Build your dream playground that will include EVERYONE of all abilities

The aim for this project is to be child-led as much as possible. The teacher should play a supportive role in clarifying the students thinking by eliciting their ideas through careful questioning. The teacher does not try to impose their ideas on the student but skilfully guides them through the process based on the students thinking.

Elicit	*Support*	*Extend*
What would you like to include in your design? *Why?* *Explain your design so far?* *Why did you decide this?* *What materials do you think we will need?* *Why did you choose those?*	*So what you did was…* *To clarify what you are saying…* *So what you are going to do next…* *Can I make a suggestion?* *Is there anywhere you have seen this before?* *What tools/materials are you going to need?*	*How will we record our results if you are investigating…?* *What's the best way to present your work?* *What impact will this have on our future learning?* *Are there any other suggestions?* *What would you do differently next time?*

Is there any more research we can do before we start making? *Did anyone use a different design? Why?* *XXX has an interesting suggestion I think we should hear?* *What do we think of that idea?*	*Have a look at XXX plan. Is there anything you could share to help each other in your making?*	

The class teacher can add any other aspects of maths or science to the project for the children to investigate. Like all design and make activities, they should include criteria, even for child-led play. The criteria should be co-constructed with the children, visible and available for the children to refer to as they design and make.

Here are a few examples of criteria you could include in the project:

- The playground is 50m in length and 50m in width. Therefore, please draw your design to scale.
- The playground must have an area of 1000m^2. What could you include in this space?
- Your playground must be designed with social distancing considered
- Include an entrance and exit that is accessible for able bodied, disabled and families with buggies.
- Must in include a sensory area of your choice
- Consider shapes in your playground. Include a variety shapes in your design.
- Include a bird's eye elevation drawing, side elevation and front elevation drawing or 3D sketch
- Can you include anything for biodiversity?
- The playground must include amenities around it such as toilets, café etc

Timeframe:

- Give children a timeframe to complete their project within to help develop self-management during independent learning.

Extensions to criteria to increase challenge

Teachers consider some of the following suggestions to challenge pupil's learning further:

- Apply a budget. Search online resources, magazines etc. Ask pupils to budget the overall cost of the playground design.
- Environmental art could also be included where pupils use materials from their own playground or local area to create an installation.
- Integrate recyclable material into the playground. What will you use and why?
- Integrate digital technology. Use Sketch Up which allows students to digitally create 3D designs.

- Drama: Create an advertisement for TV/Radio to promote the use of the playground for healthy living and community spirit
- Writing/Drama: Narrative/Recount writing of an incident at the playground

Simplify criteria for younger children or those needing support as follows;
Teachers consider some of the following suggestions to support pupil's learning further;

- Include colour/shape patterns around the playground
- Include two shapes in your design.
- Can you build a sheltered spot in your playground for rainy days?
- Use stories to inspire oral language around playgrounds.

PDST Manual Resources:

1. **School Map/Home Maps** p77 Measures Manual
   USE AND INTERPRET SCALES ON MAPS AND PLANS

2. **Playground Mapping** p.63 Shape and Space Manual
   EXPLORE, DISCUSS, DEVELOP AND USE THE VOCABULARY OF SPATIAL RELATIONS POSITIONAL AND DIRECTIONAL

3. **Design a Bedroom/Playground Project** p113 &116 Measures Manual
   FIND THE AREA OF A ROOM FROM A SCALE PLAN &CALCULATE AREA USING HECTARES