

SFI Certificate of STEM



Discover Primary
Science and Maths
www.primaryscience.ie

All primary schools meeting the criteria can apply for an SFI Discover Science and Maths Award in 2020-2021.

The first level of the Award is the SFI Certificate of STEM, which will award your school's engagement with STEM (Science, Technology, Engineering, Maths). We have adapted to accepting evidence of digital engagement for all steps.



How to apply for an SFI Certificate of STEM

- ▶ From the 12th October 2020 to 26th March 2021 you can register your school's intention to apply for a Certificate of STEM through the DPSM homepage, www.primaryscience.ie.
- ▶ Once registered, you will receive an automated email from primaryscience@sfi.ie with your log-in details. The application form buttons will appear on your profile in December 2020 for you to begin working on your application.
- ▶ The Awards are now fully digital, and all application forms **must** be completed through the online system. **Note:** We no longer accept hard copy Logs of Evidence.
- ▶ The online platform will enable you to upload digital evidence (pdf, PowerPoint, Word, video, web URLs) directly to the system for each Step.
- ▶ Approval from your school principal is required before your application can be submitted to Science Foundation Ireland. Your principal will be emailed a link to approve your application.
- ▶ Once approved, make sure to log back in and click 'Submit'. The closing date to submit your application is **5p.m. on 30th April 2021**.

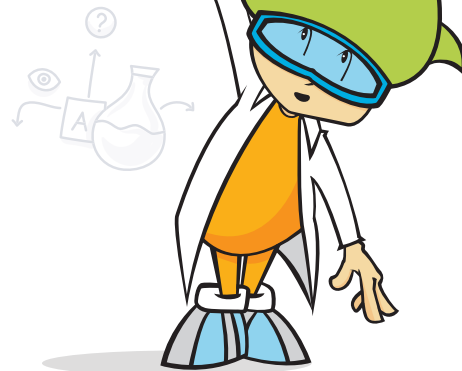
Providing your school's Log of Evidence

- ▶ This is simply evidence to back up your answers within the application and provides an account of the hands-on, student-based STEM work carried out in your school.
- ▶ Your evidence should be uploaded with a file name that clearly aligns to the criteria within each Step of the application e.g. A PowerPoint labelled Step 1 – Science.
- ▶ All evidence of STEM work should represent the students' hands-on learning including photos/videos/projects/written accounts. Teacher write-ups and lesson plans are not judged.
- ▶ There are a number of ways to present your Log of Evidence but some of the best are, a clearly labelled blog/website, a PowerPoint file for each Step or a Word/pdf document for each Step.
- ▶ We cannot judge Logs submitted by email, on USBs, hard copies or using a format that isn't compatible with Windows, or any that require a password to access.

Note: We may return your application if it is not well organised or not clearly labelled.

Tips from Award winning schools

- ▶ Start early and plan to ensure all steps of the programme will be covered. Assign different tasks to different classes - Remember if each class meets one or two of the criteria the load is shared!
- ▶ Make sure the activities are suitable and accessible to all the learners in the class.
- ▶ Keep investigations and activities relevant to the learners everyday lives and environments.
- ▶ Take photos of each experiment as evidence for your Log of Evidence. Photos and pictures can tell as much as, or more than, long written accounts.
- ▶ Create a folder on the shared drive for teachers to upload their work as it is completed.
- ▶ Set up a STEM section on the school website or blog. Teachers (or students!) can then upload evidence all through the year. Make sure to organise headings under the relevant Steps.
- ▶ Assign one member of staff responsibility for compiling and submitting the Log of Evidence.





Participation: Involve a minimum of 2 classes

STEP 1 - Science

Provide evidence for **3 examples** of the **learners** investigating and applying their STEM knowledge and skills (critical thinking, creativity, curiosity, collaboration, communication) in science activities and inquiry. You and the students can come up with your own ideas or use the DPSM classroom activities guide on www.primaryscience.ie, ESERO Ireland activities www.esero.ie/primary-level, or **any other resources** available to you. Virtual speakers (via Skype, Zoom, live online), online workshops (must be live) and digital engagement (participation in hands-on investigations remotely) will be accepted as evidence. These must be documented through photos, students' accounts or projects.

3 hands on investigations from any of the four curriculum strands:

- ▶ Living things
- ▶ Energy and forces
- ▶ Materials
- ▶ Environmental awareness and care

STEP 2 - Technology

Provide evidence for **1 example** of how the **learners** used technology as part of their school work. By technology we mean the use of Information Communications Technologies [ICT], coding, robotics or product design using materials (see list below).

Examples can include:

- ▶ Record and analyse data collected e.g. a spreadsheet or graph.
- ▶ Develop a blog, website or video.
- ▶ Use electronic components to build simple circuits.
- ▶ Use different materials e.g. wood, metals and plastics, for design and make projects.
- ▶ Take part in coding and computer science projects: National Scratch Competition www.scratch.ics.ie, Hour of Code www.hourofcode.com/ie, EU Code Week www.codeweek.eu
- ▶ Explore robotics e.g. First Lego League www.firstlegoleague.org
- ▶ Engage pupils in the use of game-based learning such as Minecraft.
- ▶ Use microscopes during investigations.
- ▶ Participate in Tech Week in March 2021 www.techweek.ie
- ▶ Explore renewable energy technologies e.g. Use solar energy kits, build simple windmills.
- ▶ The use of PowerPoint, ICT and online supports by teachers do not count as Technology for this Award.

STEP 3 - Engineering

Provide evidence for **1 example** of how the **learners** investigated engineering in class or in the local area by applying their STEM knowledge and skills (critical thinking, creativity, curiosity, collaboration, communication). Video and photo evidence of at-home investigations are also accepted.

Examples can include:

- ▶ Design and make activities e.g. making models (exploring, planning, designing, making, evaluating). For sample activities including design a bridge, a boat, a rocket, a water pump, a catapult, see the 'classroom activities' section of www.primaryscience.ie
- ▶ Digital investigations of engineering using Google Maps, online research and project creation are accepted.
- ▶ Investigate and develop an understanding of how everyday items e.g. bicycle gears work.
- ▶ Organise an event during Engineers Week 2021, like a simple design challenge in the classroom or at home or use the Engineers Week 2021 classroom pack.
- ▶ Participate in the STEPS Young Engineers Award www.steps.ie

STEP 4 - Maths

Provide evidence for **1 example** of how the **learners** have applied their Maths knowledge and skills in practical ways.

Examples can include:

- ▶ Children using Maths skills and knowledge as part of Science, Technology, Engineering/design and make, or other activities such as baking or gardening e.g. ordering, measuring distances, capacity, weight, recording and analysing data. Using Maths operations; ratio, percentages, averages.
- ▶ Use Maths to record and analyse your science investigation results where appropriate.
- ▶ Take part in **Maths Week 2020** www.mathsweek.ie
- ▶ Develop a Maths trail around our school, or for students' to carry out at home (if remote learning).
- ▶ Use Maths in practical ways to help explore and solve real world problems.
- ▶ Take part in other maths focused activities e.g. Mathletes Challenge, Mangahigh or Maths Eyes <http://www.haveyougotmathseyes.com/>

STEP 5 - STEM Show and Tell

Provide evidence for **1 example** of how the **learners** have presented and explained their STEM work to others (**beyond their own class**).

Examples can include:

- ▶ Evidence of students presenting their Science work to others in the school or online e.g. digital Showcase over Zoom with parents/grandparents/other classes.
- ▶ Hold an open day or evening online, where students present their STEM work to the school, parents or community.
- ▶ Take part in an joint online Science event with another school.
- ▶ Take part in a Science fair (live or online) where students present and discuss their STEM projects e.g. ESB Science Blast, Junior Lego League, BT Young Scientist.