To be filled out by Teacher ONLY

School Name: ___________________________ Roll No.: ___________________________

Class:  
Third □  Fourth □  Mixed Third & Fourth □

Teacher Name: ___________________________

Teacher Email: ___________________________ Teacher Mobile No.: ___________________________

Engineering Team Name: ___________________________

Project Title: ___________________________

Please note failure to fill in cover page may result in the project book not being judged.
PHOTO CONSENT FORM

If you are including any photos of students in STEP 3 of the project book, please complete a consent form for each student. Please do not send in additional photos.

Child’s name: ____________________________

School name: ____________________________

Engineers Ireland is seeking your consent, as parent or guardian for the above named child, to take photos/videos of the child whilst the child is attending an Engineers Ireland STEPS Programme event and to use such photos/videos for publicity and marketing purposes to help promote the Engineers Ireland STEPS Programme. The photos/videos will not be used for any purposes. The photos/videos will be only be used for as long as necessary for the promotional and marketing purposes or upon withdrawal of your consent, whichever occurs first.

The photos/videos will only be shared with:

- Suppliers who are assisting us with our marketing, such as our photographer and/or videographer, our designer, our printer and/or our website developer and web hosting provider to facilitate the upload of the information to the Engineers Ireland website.
- The Engineers Ireland social media channels and the providers of those platforms (e.g. LinkedIn, Facebook and Twitter). Through using these platforms, the providers may transfer your data outside the European Economic Area but do are required to do so in a GDPR-compliant manner;
- Engineers Ireland websites and/or publications; and
- Members of the general public who may see any of the above publicity and/or marketing materials.

By filling in the details on this form, along with your signature, you hereby provide consent to Engineers Ireland for the named child’s photograph/video* to be taken at the Engineers Ireland STEPS Programme and for these photos/videos to be used in the manner outlined above.

(*Note: if Engineers Ireland wishes to publish a child’s name beside a photograph or within a video of a child, separate prior consent will be sought in this regard.)

Please complete and return this form to your teacher.
You may withdraw this consent at any time by emailing steps@engineersireland.ie

Parent/guardian name: ____________________________

Parent/guardian signature: ____________________________

Date: ____________________________
Welcome to the STEPS Young Engineers Award!

The STEPS Young Engineers Award is a competition for 3rd and 4th class that introduces engineering. Students brainstorm an engineering project, make a prototype and meet engineering role models. There are lots of great prizes to be won including the STEPS Young Engineers Award Trophy for the winning team.

Student Instructions

We want you to work in teams to complete this project book and fill it out using pen or pencil. You will be following five steps as you work through your project book.

1. Brainstorming ideas and picking your project.

2. Drawing your project.

3. Making your project’s prototype.

4. Testing & evaluating your project.

5. Presenting your project.

Take care of your project book and keep it neat and tidy as you will be sending it by post to our Team of Expert Engineer Judges to read. They will read all the Project Books from all the Engineering Teams across the country and will decide on a winner!
STEP 1
BRAINSTORM YOUR IDEAS
20 MARKS - 90 MINS

A. GET INTO YOUR ENGINEERING TEAMS

Engineers regularly work in teams. Get into teams of up to 6 students. When you’ve got your new team, the first thing to do is sit down with your new engineering team and choose a team name.

Engineering team name:

Engineering team members:

1. ____________________________ 4. ____________________________
2. ____________________________ 5. ____________________________
3. ____________________________ 6. ____________________________

Engineering design process – you are all Engineers!

Engineers bring dreams to life. Engineers are from diverse backgrounds and they take ideas and turn them into reality, using science, maths and imagination. Engineers are a lot like you!

You are about to follow the steps of a real engineering team on a real engineering project. The engineering design process is a series of steps that engineers follow to come up with a solution to a problem. Many times, the solution involves designing a prototype and you will be designing a prototype too!
B. BRAINSTORM YOUR IDEAS
In your team, look around your community and pick out three things you would like to improve. This could be something that would help a friend or family member, or it could be something that would help the whole community.

<table>
<thead>
<tr>
<th>Idea 1</th>
<th>Ask yourselves what problems would you like to improve in your local community or in the life of someone in your local community e.g. a friend, family member or neighbour? e.g. We would like to improve the road outside the school</th>
<th>Why? Give a reason for each. e.g. Cars travel too fast.</th>
<th>Imagine you are a team of Engineers; how would you make an improvement? What is your Engineering Solution? e.g. Install pedestrian traffic lights to slow down the cars.</th>
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<tbody>
<tr>
<td>Idea 2</td>
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<tr>
<td>Idea 3</td>
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C. PICK YOUR FAVOURITE IDEA FOR YOUR PROJECT

Pick your favourite idea from above.

We picked:

Why did you pick this idea?

Congratulations, now you have picked your project! Tell us more about your project.

Name your project:

How will your project help your community?

You will be designing and making an example of your project, do you think this will be difficult? If so, why could this be difficult and how you will overcome these difficulties?
STEP 2
DRAW YOUR PROJECT
20 MARKS - 60 MINS

Now it is time to draw your project!
This is a drawing of your project that you are going to create in STEP 3. Here is an example of real engineers drawing their ideas.

Instructions:

1. Do a rough sketch in your copybook or on a blank sheet of paper. Engineers don’t complete a drawing in one go, they make changes before making the final drawing.

2. Draw your project in the space below.

3. Label the project clearly, the different parts of the project and what it does.

4. Insert measurements and numbers to show what size your project will be when you make it e.g. your drawing might be 1cm, but your project might be 4cm in size.

5. Keep your writing neat and tidy so it is easy to read.

6. Colour in your drawing.

7. Use your imagination!

You will need:
- A pencil – to draw your project.
- A ruler – to tell us the size and dimensions of your project.
- An eraser – it is okay to make mistakes!
- Colours – to colour in your drawing.
STEP 3
MAKE YOUR PROJECT
20 MARKS - 90 MINS

Engineers make things people use every day like computers, phones, roads, bridges, and cars. Now, bring your design to life! Make your project. Engineers call this a Prototype; this is a sample of what your project will look like in real life.

Materials list
Write a list of materials you will need for creating your prototype. Use the materials you have on hand. You can make with recyclable materials found in your classroom, your home or your local area.

Here are some things you could use:

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Collect all your materials and get started. Start making your prototype, including each part of your project. You may need to make lots of changes so don’t worry!
Optional: We would love to see a photo or drawing of your prototype. Include a drawing or stick in photos of your prototype here on these two pages. Don’t forget to add labels to tell us about it. Please only use the space below and do not send in extra photos. **Photos must be stuck in with your project name and team name on the back, thank you 😊**

Project name: 

Team name: 

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STEP 4
TEST & EVALUATE YOUR PROJECT
20 MARKS - 90 MINS

Engineers test their prototypes to find out what works and what doesn’t. Some engineers spend years trying to get their ideas to work! An important part is learning from what didn’t work. Test your prototype, check what works and what doesn’t work. Make recommendations on what can be improved.

A. TELL US ABOUT YOUR PROTOTYPE

<table>
<thead>
<tr>
<th>What changes did you make to your prototype when creating it and why? Think of at least one example. e.g. We planned to use tin foil as the solar panels for our new car, but it kept getting torn.</th>
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<tr>
<th>What does your prototype in STEP 3 do? Test it out and tell us how does it work? Describe its design features.</th>
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<table>
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<th>Who will use your prototype and where will it be used?</th>
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<table>
<thead>
<tr>
<th>How could you make your prototype better, if you were to make it again?</th>
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B. Reflect on your project book

If you were to do the whole project again from the beginning, what would you do differently?

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

What was the most important thing you learned about being an engineer while working on your project?

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________
STEP 5
PRESENT YOUR PROJECT (OPTIONAL)
90 MINS

After Engineers’ test and evaluate a new Prototype, they like to share the results of their tests with others. It helps them get ideas in order to make their products better. If you have time, you can show off your Engineering Prototypes! Showcase your prototypes to your classmates, a STEPS Volunteer, an invited guest such as Guest Engineer, your families or another class in the school.

A. Prepare your presentation
Your team should prepare answers to the below questions. Divide each question between your team. Make sure each team member gets the chance to say something about your project. You will have 5-minutes to give the presentation.

<table>
<thead>
<tr>
<th>Questions (answer these questions as a team)</th>
<th>Name of team member</th>
</tr>
</thead>
<tbody>
<tr>
<td>What was the problem in your community?</td>
<td></td>
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<tr>
<td>What is your project idea? How did you come up with your idea?</td>
<td></td>
</tr>
<tr>
<td>What is your Prototype and what materials did you use to make it?</td>
<td></td>
</tr>
<tr>
<td>How does your Prototype work?</td>
<td></td>
</tr>
<tr>
<td>What was the most challenging part of your project?</td>
<td></td>
</tr>
<tr>
<td>What was the most enjoyable part of your project?</td>
<td></td>
</tr>
</tbody>
</table>
B. PRESENT

Top tips for delivering your presentation

✓ 5 minutes per presentation
✓ Introduce yourselves by each team member saying their name
✓ Each team member speaks
✓ Speak loudly and clearly
✓ Be respectful and listen to one another.
✓ Show your prototype

Optional: Stick in photos of your presentation here in this box. Please only use the space below and do not send in extra photos. Photos must be stuck in with your project name and team name on the back of photo, thank you.

Project name: ________________________________
Team name: ________________________________

Congratulations on completing the STEPS Young Engineers Award!
Now that you know how to brainstorm, draw, make, test, evaluate and present projects, you’ll be able to come up with all kinds of cool problem-solving solutions!
HOW TO SUBMIT YOUR PROJECT

A.  
Ask your teacher to complete the submission form online at smapply link before sending your project to us in the post.

B.  
Ask your teacher to fill out the contact information on the cover page of this project book.

C.  
Send your project book to us by Friday, 4th of December at the address below:

Young Engineers Award 2020  
STEPS  
Engineers Ireland  
22 Clyde Road  
Ballsbridge  
Dublin 4  
D04 R3N2

The competition will be judged on the Project Book only. Please do not send extra pages or photographs. If you have any issues, please call STEPS on 01 6651340 or email steps@engineersireland.ie

Thank you!