



Special note: Thank you for your interest in Engineering Academy! This is the paper application for the Johannesburg Engineering Academy starting in March 2024 (Cohort 3).

We highly recommend that you apply using our online application. To access the application, you will need to create an account at <https://www.nextengineers.org/user/register>.

For more information on the online application, please visit <https://www.nextengineers.org/how-apply-engineering-academy>. If you are experiencing any issues accessing the application, please e-mail NextEngineers@fhi360.org.

We look forward to receiving your application by the **31 January 2024** deadline.





Next Engineers: Johannesburg Engineering Academy Cohort 3 Paper Application

About Next Engineers: Johannesburg Engineering Academy

Are you curious about the world and how it works? Do you want to make the world better by solving the problems around us? Then the Next Engineers: Engineering Academy might be for you!

What is an engineer? The answer may surprise you. Yes, engineers design and build cars and bridges, airplanes and batteries. But they do so much more! Engineers ask questions and solve real problems – in healthcare, in the environment, and in just about any field you can think of! Engineers love adapting and improving things. They are good at visualizing new possibilities and coming up with creative solutions.

We want **you** to become an engineer! In fact, if you graduate from the Next Engineers: Johannesburg Engineering Academy and enter higher education for an engineering degree, you will receive a partially paid bursary.

The world needs more diverse engineers to help build a world that works. If you are from an ethnic minority group, and/or a young woman, we strongly encourage you to apply to the Engineering Academy. Read the details below to learn more.

Overview and Schedule

The Engineering Academy is a 3-year programme that can help you become an engineer through design challenges and skill-building workshops. Engineering Academy sessions take place outside of school hours (such as Saturdays and school holidays) at Witwatersrand (Wits) University. Transportation assistance can be provided as needed.

Engineering Academy for Cohort 3 will begin March 3, 2024. Applicants selected to participate in Engineering Academy will receive the full Engineering Academy schedule when they are notified of admission into the program.

Johannesburg Engineering Academy is managed by PROTEC and FHI 360.

Selection Process

Engineers come from various backgrounds and have many interests. This application is an opportunity for you to share more about yourself and how the Engineering Academy would be a good fit for you. We are looking for learners who:

1. Are in Grade 10 in the 2024 school year;
2. Live in Johannesburg;
3. Demonstrate *academic aptitude* by earning at least a Level 5 in mathematics and science in Grade 9*;
4. Demonstrate *academic commitment* by pledging to study pure mathematics and physical sciences from Grade 10 to Grade 12;
5. Demonstrate *qualities needed to succeed as an engineer*, including:
 - Persistence (dedication to schoolwork, commitment to fulfilling responsibilities, and/or commitment to bettering oneself or the community);
 - Evidence of interest in engineering and/or participating in the Engineering Academy; and
 - A developing engineering mindset.





**If your level is slightly below the minimum, as determined by PROTEC, but your reference indicates you are academically prepared, you may be deemed to meet this requirement.*

If you would like to participate in the Engineering Academy, submit a complete application and supporting documents listed in the application by **Wednesday, 31 January 2024**.

If you meet the criteria above, based on our application review, you will be placed into a final selection pool. From there, applicants will be randomly selected into the Academy. Final selection into Engineering Academy will not be based on gender, ethnicity, race, or physical ability.

We will notify you of your selection status by **Friday, 23 February 2024**.

Application Process

The application, and supporting documents, are due by **Wednesday, 31 January 2024**. **If you are having difficulty submitting your materials, please contact PROTEC at nextengineers@protec.org.za before the 31 January deadline.** If you have questions about the application process, you are welcome to contact PROTEC anytime.

You may apply online, or you may apply by paper using the application below. You may submit the documents, by the application deadline, using the following methods:

- E-mail a copy of the application and supporting materials listed below to nextengineers@protec.org.za
- Drop off the application and supporting materials listed below to your school office by the deadline.
- Drop off the application and supporting materials listed below to the PROTEC office at: Unit 4&5, The Ferns Office Park, 364, Pretoria Avenue, Ferndale, Randburg, 2160 by the deadline.

Additional Required Materials: In addition to this completed application, you will need to submit the materials listed below.

1. We want to know how you are doing in school, especially in math and science classes, so please **attach to the application a copy of your 4-term grade 9 report for the 2023 academic year**. Please contact your school if you need help getting your grade 9 report.
2. We want to know if an adult in your life thinks you will be a good fit for the Engineering Academy. **Find an adult to serve as your reference for the programme and ask them to complete the Reference Form at the bottom of this application and submit the completed form with the application.** Here are some ideas of adults who could serve as a reference for you: teacher, life orientation teacher, mentor, coach, employer, or another adult who can tell us more about you. Your family members may **not** serve as your reference. *Submitting a reference form is optional for the completion of your application, but we highly encourage you to submit the form as it will help us get to know you better.*





Johannesburg Engineering Academy Paper Application

Instructions: This form, and supplemental materials, must be received by **31 January 2024**. Please write legibly.

About You

*indicates required answer

First Name:*

Last Name:*

Age:*

Address:*

City:*

Postcode:*

Cell Phone Number:*

Alternative Cell Phone Number:

E-mail Address:*

What is your gender identity? (Check all that apply.)*

- | | |
|---------------------------------------|--|
| <input type="checkbox"/> Agender | <input type="checkbox"/> Male |
| <input type="checkbox"/> Female | <input type="checkbox"/> Transgender |
| <input type="checkbox"/> Gender Fluid | <input type="checkbox"/> Prefer not to say |
| <input type="checkbox"/> Genderqueer | <input type="checkbox"/> Gender not listed. (Please describe): |

How do you describe your ethnicity? (Check all that apply.)*

- | | |
|-----------------------------------|--|
| <input type="checkbox"/> Black | <input type="checkbox"/> Prefer not to say. |
| <input type="checkbox"/> Coloured | <input type="checkbox"/> Race not listed. (Please describe): |
| <input type="checkbox"/> Indian | |
| <input type="checkbox"/> White | |

How did you hear about Next Engineers: Johannesburg Engineering Academy? (Check all that apply.)

- | | | | |
|---|--|----------------------------------|---------------------------------|
| <input type="checkbox"/> Attended a presentation in community | <input type="checkbox"/> Teacher / School Representative | <input type="checkbox"/> Twitter | <input type="checkbox"/> Parent |
| <input type="checkbox"/> Attended a presentation in school | <input type="checkbox"/> Instagram | <input type="checkbox"/> Friend | |
| <input type="checkbox"/> Other: | | | |

Did you attend Next Engineers: Johannesburg Engineering Camp in July 2023? Yes No

Did you participate in a Next Engineers engineering design challenge at your school? Yes No





Privacy Notice*

*indicates required answer

Check the box below acknowledging the privacy notice:*

I acknowledge the terms listed in the GE Next Engineers Privacy Notice on pages 14-15 of this application.

Your Education & Extracurricular Activities

*indicates required answer

Will you be in Grade 10 in the 2024 school year?*

(Only Grade 10 learners are eligible for the Engineering Academy.)

Yes

No

Name of School*:

What level did you earn in mathematics in Grade 9?*

1

2

3

4

5

6

7

What level did you earn in science in Grade 9?*

1

2

3

4

5

6

7

Note: your predicted grade should be at least a level 5.

Note: your predicted grade should be at least a level 5.

Reminder: you will need to submit a 2023 grade 9 report for all four terms with your application.

Do you agree to take pure mathematics from Grade 10 through Grade 12?

Yes No

If "No," please explain below:

Do you agree to take physical sciences from Grade 10 through Grade 12?

Yes No

If "No," please explain below:

Briefly tell us how you spend time outside of school classes. Do you participate in sports, clubs, summer camps, or organizations associated with school or the community? Do you work or have responsibilities for your family? Share here:*





Learner-Response Questions

*indicates required answer

We want to know more about your interests, thoughts, and plans. Please answer the questions below. All questions are opportunities for you to share more about yourself with us. There are no wrong answers.

Learner Responses, Section #1

What excites you most about engineering or the Engineering Academy? Why does it excite you? Answer in 3-4 sentences.

What do you hope to gain by participating in Engineering Academy? Answer in 3-4 sentences.





Learner Responses, Section #2 Please choose one group of questions (A, B, or C) to respond to:

Question Group A: Engineers often learn through failure. They 'fail forward' and see it as an opportunity to improve.

What was the problem? Answer in 2-4 sentences.

Why was it an important problem to try and solve? Answer in 3-4 sentences.

How did you solve, or try to solve, the problem? Answer in 3-4 sentences.

Continued on next page...





What failures or setbacks did you face and how did you deal with these? Answer in 3-4 sentences.

Question Group B: Engineers try to solve real-world problems with practical solutions that use math and science. Tell us about a problem in your community that you would like to help solve as an engineer.

What is the problem? Answer in 2-4 sentences.

Why do you think this is an important problem to solve? Answer in 2-4 sentences.

How would you try to solve this problem? Answer in 2-4 sentences.

Continued on next page...





What possible engineering solutions would you try? Answer in 2-4 sentences.

Question Group C: Your task is to design the perfect lunchbox. Your lunchbox must be easy to carry and must have space for food and drink for at least one person.

- What shape should your lunchbox be?
- How big should it be?
- How strong and/or light should it be?
- Will it keep your food and drink hot or cold? If so, how?

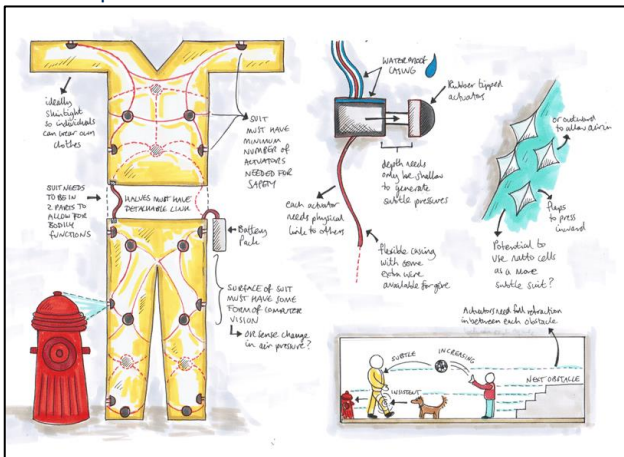
Use the space below to submit one or more annotated sketches.



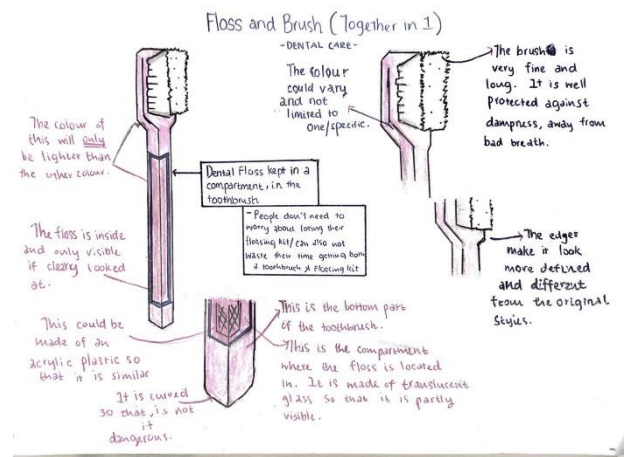
What lunchbox shape did you choose? Why? Answer in 2-3 sentences.

What makes your lunchbox different from other lunchboxes you have seen before? Answer in 3-4 sentences.

Examples of annotated sketches:



An annotated sketch of a wearable safety suit for the blind by Miriam Sturdee (https://www.researchgate.net/figure/Annotated-sketch-and-ideation-around-theme-of-wearable-safety-suits-for-the-blind_fig20_323993556)



An annotated sketch for a 2-in-1 brush and floss toothbrush by Mr G (https://twitter.com/mrcg_dt/status/1323069412589514757)



Parent/Guardian Section

*indicates required answer

Parent / Guardian Name:*

Parent / Guardian Address*

(if different from learner's above):*

City:

Postcode:

Cell Phone Number:*

Alternative Cell Phone Number:

E-mail address:*

Application Submission

The application is due by **Wednesday, 31 January 2024**. **If you are having difficulty submitting your application, please contact PROTEC at nextengineers@protec.org.za before the 31 January deadline.** If you have questions about the application process, you are welcome to contact PROTEC anytime.

You may apply online, or you may apply by paper using the application below. You may submit the documents, by the application deadline, using the following methods:

- E-mail a copy of the application, and supporting materials listed below, to nextengineers@protec.org.za
- Drop off the application, and supporting materials listed below, to your school office by the deadline.
- Drop off the application, and supporting materials listed below, to the PROTEC office at: Unit 4&5, The Ferns Office Park, 364, Pretoria Avenue, Ferndale, Randburg, 2160 by the deadline.





Next Engineers: Johannesburg Engineering Academy Learner Reference Form

About the Engineering Academy and Reference Form

Over three years, Engineering Academy learners (ages 15–18) learn to think and act like engineers and prepare to advance to post-secondary education through the Academy. With over 220 hours outside of school, the Academy includes a series of immersive design challenges, career coaching, and college-readiness workshops to equip diverse groups of youth with the skills they need to build an engineering identity and career. To learn more about Next Engineers and the Engineering Academy, visit www.nextengineers.org.

To support their application to the Engineering Academy, a learner has identified you as someone who can provide greater insight into their abilities and qualities. Please complete the Reference Form on page 2 and include any additional comments that can provide the review committee with relevant information about the learner.

The completed reference form should be returned to the applicant before the application deadline of 31 January 2024.

Eligibility Criteria & Selection Process

Our goal is to admit a wide range of applicants who can succeed in a college or university engineering programme. Below are the eligibility criteria that applicants must meet to be considered for selection. The applicant must:

1. Be in Grade 10 in the 2024 school year;
2. Live in Johannesburg;
3. Demonstrate *academic aptitude* by earning at least a Level 5 in mathematics and science in Grade 9;
4. Demonstrate *academic commitment* by pledging to study pure mathematics and physical sciences from Grade 10 to Grade 12;
5. Demonstrate *qualities needed to succeed as an engineer*, including:
 - Persistence (dedication to schoolwork, commitment to fulfilling responsibilities, and/or commitment to bettering oneself or the community);
 - Evidence of interest in engineering and/or participating in the Engineering Academy; and
 - A developing engineering mindset.

** If your level is slightly below the minimum, as determined by PROTEC, but your reference indicates you are academically prepared, you may be deemed to meet this requirement.*

Successful applicants will be identified by random selection of eligible participants. Final selection into Engineering Academy will not be based on gender, ethnicity, race, or physical ability.





Reference for Applicant (write name):

Reference Name:

Reference Phone:

Reference E-mail:

Your relationship to applicant: Teacher Orientation teacher Coach or mentor

Other. Please explain:

Provide a brief description of how you know the applicant:

On a scale of one (1) to five (5), with one (1) being the lowest, please rate the learner on the following characteristics. Please provide a *brief* example or explanation of your rating in the comment box. If you are not able to provide a rating, please mark 'not applicable' (N/A).

Characteristic	Rating (1-5)	Comment
Dedication to schoolwork		
Commitment to fulfilling responsibilities		
Commitment to bettering oneself or the community		
Academic aptitude for higher level mathematics and science courses		
Interest in Science, Technology, Engineering, and Mathematics (STEM)-related fields and/or activities		

Based on the programme description and core eligibility criteria listed above, as well as your knowledge of the learner, why do you think this learner is a good candidate for the Engineering Academy? (Please explain in 1 paragraph.)

The completed form should be returned to the applicant before **31 January 2024. Thank you!**

For information on Next Engineers privacy practices and how we handle your personal data, please visit www.nextengineers.org/next-engineers-privacy-notice.





GE Next Engineers Privacy Notice

This privacy notice applies to all personal information that FHI 360 and the GE Foundation (data controllers) collect or process about you in connection with participation in Next Engineers. The purpose of Next Engineers is to provide learners with opportunities to learn more about engineering and to evaluate the effectiveness of these opportunities.

For prospective learners, applicants, participants, and parents, Next Engineers collects information about you through our interest forms, your application forms, and Next Engineers participation forms. This information includes personal information, such as contact information, demographics, academic information, interests, activities, and preferences.

Your name will be included with the information provided to us through the interest form, programme application and/or programme confirmation form. For participants, your name will also be used to keep track of your attendance in Next Engineers' activities. For all other programme data, your name will be removed from the information we receive, and instead will be linked by a numerical code. You may be asked if we can record your interviews or other sessions, or use your photograph or videos, but these will be optional.

For volunteers and local community partners, we may collect your information directly from you such as your name, email, contact information and your responses on surveys with the purpose of facilitating communication, documenting participation in Next Engineers activities, and to improve Next Engineers activities.

The legal bases for collecting and processing your personal information includes the following:

- Our legitimate interest in providing this programme to learners and gathering information that will help us further develop the programme and provide more learners with similar opportunities;
- Your consent to collect certain special types of information, such as videos and photographs;
- Archiving, research, and statistical purposes.

Your data will be used and/or stored for five (5) years after the conclusion of Next Engineers.

Your Rights

To the extent provided by the law of your jurisdiction, you may have the following rights:

- The right to assess personal information we process about you and request details of that processing;
- The right to request that we update, correct, amend, erase, or restrict your personal information;
- The right to request data portability;
- The right to submit a complaint to your local data protection authority.

Withdrawal of Consent

Where provided by law, you may withdraw consent you previously provided to us or object at any time to the processing of your personal information and we will apply your preferences going forward as appropriate. Your withdrawal has no effect on the lawfulness of the data processing that occurred prior to your withdrawal.

Security

We implement technical and organizational measures to ensure a level of security appropriate to the risk to the personal information we process. These measures are aimed at ensuring the ongoing integrity and confidentiality of





personal information. We evaluate these measures on a regular basis to ensure the security of the processing. For more information on the appropriate safeguards in place, please contact us at the email address below.

Data Access and Data Transfer

FHI 360 is located in the United States and therefore, some information you provide, such as your application information, is stored on servers located in the United States. Only FHI 360 and the partner organization in your country or state implementing your local programme has access to this information in a way that is identifiable (e.g., that is connected to your name).

Your data may be used by and shared with our partners outside your country of residence, but it will be de-identified prior to being shared. This means that your name and contact information will not be connected to your personal information, but it will be coded instead. In other words, your name, phone number, and email address will never be shared with partners in other countries or states. Only FHI 360 and partners located in your country or state would have access to that data.

Any identifiable or coded personal information shared with individuals outside your country will be treated in compliance with applicable data protection laws. Data privacy and protection in those countries may not offer the same level of protection as those in your own country, but we transfer data using country-specific mechanisms, such as standard contractual clauses.

Contact Information

If you have questions or concerns regarding the way in which your personal information has been used, or you want to exercise one of your rights or withdraw consent, please contact the FHI Data Privacy Officer at privacy@fhi360.org.

Changes to the Notice

You may request a copy of this privacy notice from us using the contact details set out above. We may modify or update this privacy notice from time to time. You will be able to see when we last updated the privacy notice because we will include a revision date. Changes and additions to this privacy notice are effective from the date on which they are posted. Where changes to this policy will have a fundamental impact on the nature of the processing or otherwise have a substantial impact on you, we will give you sufficient advance notice so that you have the opportunity to exercise your rights (for example, to object to the processing).

Date of Notice: April 5, 2023

