

Build Iowa's Future Design Challenge

***Presented by the Iowa Clearinghouse for Work-Based Learning
and the Home Builders Association of Iowa***

Overview

Work-based learning (WBL) is an effective tool for educators to link what is taught in the classroom to what is needed to thrive as employees and citizens. Skills and habits ranging from punctuality to problem-solving and collaboration to critical thinking may best be acquired in the context of jobs and work. Application of classroom concepts, like solving for x when doing a cost analysis for project supplies, makes learning more meaningful. That is why the Iowa Clearinghouse for Work-Based Learning and the Home Builders Association of Iowa (HBA of Iowa) are pleased to host the **Build Iowa's Future Design Challenge** for Iowa's school districts, accredited nonpublic schools and related before- and after-school programming. Three awards – \$1,000 for first place, \$500 for second place and \$300 for third place – will be made to schools in each of the K-5, 6-8 and 9-12 grade bands for projects scored and selected by reviewers. Challenge sponsors include the Iowa Association of Community College Trustees, Kreg Tool Company and Pella Corporation. Prize money may be used for school WBL activities. Outstanding designs may be shared on Clearinghouse and HBA of Iowa websites and through other publications and events.

How it works: The Build Iowa's Future Design Challenge is open to teachers and students in school districts and accredited nonpublic schools who sign up to participate through the Clearinghouse. Please see how to do that below. Elementary and middle school students can participate in the **Iowa Home Design Challenge** by constructing a model home using materials such as toy plastic construction bricks, wood blocks and a variety of other materials of their choice. Originality is encouraged. High school students can participate in the **Iowa Dream and Design Challenge**, which involves conceptualizing and designing a project that could improve their community, such as a school athletic storage facility, a ramp for a disabled person's home or a prairie birdhouse among other ideas. Students will seek feedback about project feasibility from people who would be impacted, but students will not actually build the project.

A letter of intent to participate form must be submitted: The window opens Aug. 18, 2021, to submit the letter of intent to participate on the form provided on the Clearinghouse website at <https://clearinghouse.futurereadyiowa.gov/challenge>. The form letter must be submitted by Sept. 29, 2021.

CHALLENGE DETAILS

Iowa Home Design Challenge: Students in grades K-5 and 6-8 are invited to build a model home – with toy plastic construction bricks, wood blocks or a variety of other materials of their choice – that demonstrates building excellence. Please note, however, that prefabricated construction kits will not be allowed.

Each team must have at least two members. After a team finishes building a home, their teacher will upload their essay (up to 400 words maximum K-5 and up to 800 words maximum 6-8) written by one or more of the team members describing:

- the home's quality and design specifications;
- why the home would be a great place to live; and
- what students learn in school that connects to specific careers involved in the project.

In addition, teachers will upload at least one photo of the home and may provide up to two other artifacts – including photos, videos or other items – that showcase the work students have done.

Materials needed: toy plastic construction bricks, wood blocks or a variety of other materials.

Academic domains: mathematics, science and English/language arts.

Here is a guide to how the challenge connects to state academic standards: https://docs.google.com/document/d/18C-ap5roB1cNOGaxdGyEI4_GjsDGekht1Wq-vGY52Kw/edit

Hours involved: estimated five to 10.

Please note: Essays that exceed 400 words K-5 and 800 words 6-8 may be disqualified.

Iowa Dream and Design Challenge: Student teams in grades 9-12 are invited to improve their community by identifying the need for a project, such as a school athletic equipment storage facility, a ramp for a disabled person, a garden shed, a neighborhood mini-library or a bird house for a park or prairie, among other possibilities. Students are not expected to build the actual project, but to explore whether it is doable.

Each team must have at least two members. After a team finishes designing their project and other required components, their teacher will upload their essay (up to 800 words maximum) written by one or more team members describing:

- the project's quality, including design specifications, and a detailed cost analysis;
- the impact project could have locally;
- feedback from school and/or community members who would be affected, including whether they think the project is viable; and
- what students learn in school that connects to specific careers involved in the project.

In addition, their teacher will upload no more than three artifacts – such as photos, screen shots and design files – to the challenge portal on the Clearinghouse website to showcase the work students have done.

Materials needed: Access to a device for creation from paper and pencil to design software, among other things.

Academic domains: mathematics, English/language arts, career and technical education and social studies.

Here is a guide to how the challenge connects to state academic standards: https://docs.google.com/document/d/18C-ap5roBlcNOGAxdGyEI4_GjsDGekht1Wq-vGY52Kw/edit

Hours involved: estimated 15 to 25.

Please note: Essays that exceed 800 words may be disqualified.

TIMELINE/CHECKLIST

- Window to submit the letter of intent to participate form opens Aug. 18, 2021. A teacher may submit one letter for multiple students provided the letter includes the estimated total number of intended projects.
- Letter of intent form is due no later than 11:59 p.m. Sept. 29, 2021.** Be sure to include name and contact information – email address and cell phone number – for the lead applicant with each letter at <https://clearinghouse.futurereadyiowa.gov/challenge>.
- Submission deadline for all projects and related materials is 11:59 p.m., Friday, April 1, 2022, at <https://clearinghouse.futurereadyiowa.gov/challenge>.
Each submission must include the name of the teacher, the school, school address, grade level(s) of the student teams and the number of students who participated on each team.
- Review panel(s) will evaluate designs and related materials by April 29, 2022.
- First-, second- and third-place winners in each of the three grade bands – nine prizes total – will be announced May 4, 2021.

K-8 RUBRIC for the Iowa Home Design Challenge

Below is the rubric showing how a review team will score K-8 submissions. Please note that first-, second- and third-place awards will be made for two grade bands in the K-8 rubric: K-5 and 6-8.

In case of ties, the leadership review panel will reach a consensus on which projects to award. All projects that tie for first, second or third place, however, will be recognized with a certificate of achievement.

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| Question 1: | What is the quality of the home's design? | | | |
| The quality of the home's design is basic. 1 | The quality of the home's design is average. 2 | The quality of the home's design is above average. 3 | The quality of the home's design is outstanding. 4 | SCORE: Choose an item. |
| Reviewer Comments: | | | | |

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| Question 2: | What is the quality of the project specifications? | | | |
| Project specifications are sparse or nonexistent, with little or no detail. 1 | Some project specifications are provided with some detail. 2 | Significant, detailed project specifications are provided, demonstrating a good grasp of how they impact the home's design. 3 | Extensive, detailed project specifications are provided, demonstrating an impressive grasp of how they impact the home's design. 4 | SCORE: Choose an item. |
| Reviewer Comments: | | | | |

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| Question 3: | How well does the essay convey why the home would be a great place to live? | | | |
| The essay does not make a case for why the home would be a great place to live. 1 | The essay partially makes a case for why the home would be a great place to live. 2 | The essay makes a good case for why the home would be a great place to live. 3 | The essay makes a compelling case for why the home would be a great place to live. 4 | SCORE: Choose an item. |
| Reviewer Comments: | | | | |

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| Question 4: | How well do students connect what they learn in school to careers involved in this home design project? | | | |
| Little or no connection is made between what students learn in school and careers involved in the home design project. 1 | Some connection is made between what students learn in school and careers involved in the home design project. 2 | A strong connection is made between what students learn in school and careers involved in the home design project. 3 | An extensive, engaging connection is made between what students learn in school and careers involved in the home design project. 4 | SCORE: Choose an item. |
| Reviewer Comments: | | | | |

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| 9-12 RUBRIC for the Iowa Home Design Challenge | Below is the rubric showing how a review team will score 9-12 submissions. | In case of a tie, the leadership review panel will reach a consensus on which project to award. All projects that tie for first, second or third place, however, will be recognized with a certificate of achievement. |
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| Question 1: | What is the quality of the design project? | | | |
| The quality of the project's design is basic. 1 | The quality of the project's design is average. 2 | The quality of the project's design is above average. 3 | The quality of the project's design is outstanding. 4 | SCORE: Choose an item. |
| Reviewer Comments: | | | | |

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| Question 2: | What is the quality of the project specifications? | | | |
| Project specifications are sparse or nonexistent, with little or no detail. 1 | Some project specifications are provided with some detail. 2 | Significant, detailed project specifications are provided demonstrating a good grasp of how they impact the project's design. 3 | Extensive, detailed project specifications are provided demonstrating an impressive grasp of how they impact the project's design. 4 | SCORE: Choose an item. |
| Reviewer Comments: | | | | |

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| Question 3: | What is the quality of the cost analysis? | | | |
| The cost analysis is minimal or nonexistent. 1 | The cost analysis provides some details, but has many gaps. 2 | The cost analysis provides significant details, but has some gaps. 3 | The cost analysis is comprehensive with many useful details, and leaves few gaps. 4 | SCORE: Choose an item. |
| Reviewer Comments: | | | | |

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| Question 4: | Is the impact the project could have locally compelling? | | | |
| The essay does little or nothing to make a case for the impact the project could have locally. 1 | The essay half-heartedly makes a case for the impact the project could have locally. 2 | The essay makes a strong case for the impact the project could have locally. 3 | The essay makes a convincing, well-researched case for the impact the project could have locally. 4 | SCORE: Choose an item. |
| Reviewer Comments: | | | | |

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| Question 5: | What is the quality of external feedback on project viability? | | | |
| Little or no feedback is provided from school and/or community members who would be affected, including whether they think the project is viable. 1 | Some feedback is provided from school and/or community members who would be affected, including whether they think the project is viable. 2 | Significant feedback is provided from school and/or community members who would be affected, including whether they think the project is viable. 3 | Extensive feedback is provided from school and/or community members who would be affected, including whether they think the project is viable. 4 | SCORE: Choose an item. |
| Reviewer Comments: | | | | |

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| Question 6: | How well does the essay connect what students learn in school to careers involved in this design project? | | | |
| Little or no connection is made between what students learn in school and careers involved in this design project. 1 | Some connection is made between what students learn in school and careers involved in this design project. 2 | A strong connection is made between what students learn in school and careers involved in this design project. 3 | An extensive, engaging connection is made between what students learn in school and careers involved in this design project. 4 | SCORE: Choose an item. |
| Reviewer Comments: | | | | |

Frequently Asked Questions

- 1) What is the minimum and maximum student team size?
 - A. Teams must be comprised of at least two students, but can be larger with no maximum limit.
- 2) Can a superintendent or principal submit a letter of intent to participate form, or must it come from a teacher?
 - A. Yes, a superintendent, principal or other school official is welcome to submit the form on behalf of teachers.
- 3) Are elementary students, especially K-3, really expected to write a 400-word essay?
 - A. The goal is for essays to be thoughtful, detailed and complete, but there is no penalty for shorter essays.
- 4) Are there any limitations on the kinds of materials that can be used for K-8 project?
 - A. Prefabricated construction kits are not permitted, but students can be creative when selecting their materials, such as toy plastic construction bricks, wood blocks, popsicle sticks or a variety of other possibilities.
- 5) For the 9-12 project, how many school and/or community members need to be interviewed?
 - A. Depending on the nature of the project, students will want to interview at least one person (in person, by phone, video conference, email, etc.) who would be impacted by their project and who may need to approve the project were it to move forward beyond the design stage. Ideally, several people will be interviewed.
- 6) Is it OK to submit projects and related materials before the April 1, 2022, deadline?
 - A. Yes, projects may be submitted anytime between Sept. 29, 2021, and April, 1, 2022.
- 7) Is it OK to send extra attachments, such as a detailed one-page cost analysis, in addition to the 9-12 essay?
 - A. Up to three artifacts are allowed in addition to the essay, so the one-page cost analysis would count as one of those three.
- 8) What if a teacher submits more than three items in addition to students' K-8 or 9-12 essay?
 - A. Only the first three items submitted in addition to the essay will be considered.
- 9) Can prize money be used to make my 9-12 students' project a reality?
 - A. Prize money can be used for school work-based learning activities, such as buying more building materials for K-8 students or actually funding the 9-12 project design to make it a reality.

If you have other questions

Questions may be directed to jake.welchans@iowa.gov and will be posted for others to view in order to provide the same assistance to everyone. Questions will be not considered otherwise, so all participants have access to the same information.