



Design and Build a Passive Solar House— Student Self-assessment Rubrics

Student Rubric: Researching Passive Solar Houses

	I need to work on this...	I can do this...	I am great at this...
Researching	<ul style="list-style-type: none"> I used my background knowledge, the Internet and a book for information on my topic 	<ul style="list-style-type: none"> I used my background knowledge, the Internet and books for information on my topic 	<ul style="list-style-type: none"> I interviewed key people or experts (e.g., First Nations elders), used my background knowledge, the Internet and books to find information on my topic
Recording	<ul style="list-style-type: none"> I took some notes, but could have included more information I could sort or classify some of the data using drawings or provided tables 	<ul style="list-style-type: none"> I took notes, but I could have added more detail I could sort and classify most of the data using drawings or provided tables I had questions about some of my choices 	<ul style="list-style-type: none"> I took careful, detailed notes I could sort and classify the data I collected using drawings or provided tables. I came up with other ways to record and show the data My data is accurately recorded
Understanding	<ul style="list-style-type: none"> I am beginning to understand what passive solar design is I have some understanding why Native Americans use passive solar design I know why some building materials work best in passive design I have some understanding that energy comes in various forms I can identify some forms of energy I am beginning to understand what energy conservation is 	<p>Referring to my notes:</p> <ul style="list-style-type: none"> I can explain what passive solar design is and how it works I know how and why Native Americans use passive solar design I can identify some building materials that work best in passive solar design I understand that energy comes in various forms I can identify forms of energy I have some understanding what energy conservation is I have a basic understanding of key concepts 	<p>Without referring to my notes:</p> <ul style="list-style-type: none"> I can explain in great detail what passive solar design is and how it works I know how and why Native Americans use passive solar design I can identify what building materials work best in passive solar design and I can explain why I understand that energy comes in various forms I can identify various forms of energy I have an in depth understanding of key concepts

Student Rubric: Planning and Designing a Passive Solar House

	I need to work on this...	I can do this...	I am great at this...
Defining	<ul style="list-style-type: none"> I am beginning to understand what the design issue is I am starting to be able to identify the main objective for the design I can name one or two of the constraints 	<ul style="list-style-type: none"> I can identify the design issue or problem to solve I can identify the main objective for the design I can name some constraints 	<ul style="list-style-type: none"> I can clearly identify the design issue or problem to solve I can clearly identify the main objective for the design I can outline any constraints
Ideating	<ul style="list-style-type: none"> I can come up with an idea on my own I can agree with my group on some things I can narrow down one idea, with help 	<ul style="list-style-type: none"> I can come up with an idea with prompts like a photo I can come up with an idea, if someone gets me started with their ideas I can choose an idea, but I might not be able to tell you why I chose that idea 	<ul style="list-style-type: none"> I can generate potential ideas I can build on others' ideas I can screen ideas against the objective and constraints I can choose an idea to pursue and defend my choice
Prototyping	<ul style="list-style-type: none"> I can make a simple plan I can list some of the tools and materials I need I can explain some of my material choices I can make a simple drawing of my design I can explain one reason why I chose my design 	<ul style="list-style-type: none"> I can make a plan I can list the tools and materials that I need to carry out the plan I can explain most of my material choices I can draw my design I can give a simple explanation of my design 	<ul style="list-style-type: none"> I can outline a detailed plan I can identify the tools and materials I need to follow the plan I can explain my material choice using evidence from my research I can make a detailed drawing of my design I can explain my design to my class I can defend my design choices

Student Rubric: Constructing and Testing the Passive Solar House Design

	I need to work on this...	I can do this...	I am great at this...
Working Together	<ul style="list-style-type: none"> I sometimes work well in a group I can occasionally take on the roles and responsibilities in a project because I am not sure that others will do their share I agree with some of my group mates' ideas 	<ul style="list-style-type: none"> I work well in a group I like sharing ideas and the workload Sometimes, I wonder if I could be doing more to help the project along I wonder if my group mates could be doing more to help I listen to other people's ideas 	<ul style="list-style-type: none"> I excel at working in a group I make sure that everyone is heard, that their ideas are recorded, and that everyone has a clearly defined role and set of responsibilities I build on others' ideas and add new ideas of my own
Prototyping	<ul style="list-style-type: none"> we built a first version of the product that looks somewhat like our drawing we could explain some changes 	<ul style="list-style-type: none"> we constructed a first version; it looks exactly like our drawing we critiqued our original design 	<ul style="list-style-type: none"> we constructed a first version of the product using our drawing we reflected on the design as we built the prototype and made changes to tools, materials and procedures
Testing	<ul style="list-style-type: none"> we listened to peer feedback but may not have followed suggestions we did a few tests, and acted on some of the results we talked about some of the results and what they meant 	<ul style="list-style-type: none"> we tested the product we listened to peer-feedback we may or may not have followed through on peer feedback we made some changes we may or may not have tested it again 	<ul style="list-style-type: none"> we tested the product we listened and acted on peer feedback we made changes and tested our product again we repeated until we were fully satisfied with the product
Making	<ul style="list-style-type: none"> we constructed a final product with help we may have needed reminders to use tools and materials in a safe way 	<ul style="list-style-type: none"> we constructed the final product but may not have made many changes we used tools and materials in a safe manner 	<ul style="list-style-type: none"> we constructed the final product incorporating planned changes we used tools and materials in a safe manner

Student Rubric: Sharing and Evaluating the Passive Solar House Design

	I need to work on this...	I can do this...	I am great at this...
Presenting Information	<ul style="list-style-type: none"> I can demonstrate our product; some people may not have understood my demonstration I can give a basic explanation of how we came up with our design I can answer some questions about our design choices I can explain a few reasons why we did what we did 	<ul style="list-style-type: none"> I can demonstrate our product and give a detailed explanation of how we came up with our design I can answer most questions about our design choices 	<ul style="list-style-type: none"> I can demonstrate our product in an engaging way I present information so clearly that my audience doesn't have questions about our product
Reflecting / Evaluating	<ul style="list-style-type: none"> I can somewhat tell whether or not my product meets the objective I have some idea of the objective I am learning to determine if my investigations were fair tests and how they might be improved upon I am learning to give constructive feedback I am learning how to accept feedback 	<ul style="list-style-type: none"> I can determine whether or not my product meets the objective I have some ideas what I could have done differently to improve the outcome I can identify why my investigations were fair tests, and I have some idea how they could be improved upon I can give constructive feedback, and I mostly know what to say and how to say it I can receive feedback, and mostly consider it 	<ul style="list-style-type: none"> I can determine whether or not my product meets the objective I can identify steps that I could take to improve on my work I can identify why or why not my investigations were fair tests I can suggest improvements to my investigative methods I can give constructive feedback I can receive and act on feedback



Design and Build a Passive Solar House—Teacher Rubrics

Teacher Rubric: Research

	1.	2	3
Researching	<ul style="list-style-type: none"> sometimes uses the Internet and books in ways to find out information on the topic 	<ul style="list-style-type: none"> uses the Internet and books to find information on their topic 	<ul style="list-style-type: none"> interviews key people or experts (e.g., First Nations elders), and uses the Internet and books to find information on the topic
Recording	<ul style="list-style-type: none"> takes some notes, but may miss information needs support to sort or classify the data using drawings or provided tables understands some of the information collected 	<ul style="list-style-type: none"> take notes, but could have added more detail sorts and classifies most of the data using drawings or provided tables doesn't understand some of the information 	<ul style="list-style-type: none"> takes careful, detailed notes sorts and classifies data using drawings or provided tables data is neatly and accurately recorded
Understanding	<p>*notes sometimes serve as a reference:</p> <ul style="list-style-type: none"> is beginning to understand what passive solar design is has some understanding why Native Americans use passive solar design knows some building materials that work best in passive design has some understanding that energy comes in various forms can identify some forms of energy has some understanding what energy conservation is 	<p>*using notes as a reference:</p> <ul style="list-style-type: none"> can explain what passive solar design is and how it works knows how and why Native Americans use passive solar design identifies what building materials work best in passive solar design and can explain why understands that energy comes in various forms can identify forms of energy understands what energy conservation is provides some evidence for their understandings 	<p>*without notes:</p> <ul style="list-style-type: none"> can explain what passive solar design is and how it works knows how and why Native Americans use passive solar design identifies what building materials work best in passive solar design and can explain why understands that energy comes in various forms can identify various forms of energy understands what energy conservation is provides evidence for their understandings

Teacher Rubric: Planning and Designing

	1	2	3
Defining	<ul style="list-style-type: none"> is beginning to understand what the design issue is is starting identify the main objective for the design can name a few constraints 	<ul style="list-style-type: none"> identifies the design issue or problem to solve identifies the main objective for the design can name some constraints 	<ul style="list-style-type: none"> can clearly identify the design issue or problem to solve can clearly identify the main objective for the design can outline any constraints
Ideating	<ul style="list-style-type: none"> can come up with an idea with some supports agreed with some items among the group is beginning to be able to chose an idea 	<ul style="list-style-type: none"> can come up with an idea can come up with an idea, if someone in the group initiates can choose an idea, but might not be able to tell you why they chose that idea 	<ul style="list-style-type: none"> can generate potential ideas can build on others' ideas can screen ideas against the objective and constraints can choose an idea to pursue and defend their choice
Prototyping	<ul style="list-style-type: none"> made a rudimentary plan but missed key steps can list some tools and materials needed can explain some material choices can draw a rudimentary design can explain a few reasons why they chose the design 	<ul style="list-style-type: none"> can make a plan can list most of the tools and materials needed to carry out the plan can draw a design but may be missing some detail can give a simple explanation of their design 	<ul style="list-style-type: none"> can outline a general plan can identify the tools and materials needed to follow the plan can explain material choices using evidence from their research can make a detailed drawing of the design can explain their design to the class can defend their design choices

Teacher Rubric: Constructing and Testing

	1	2	3
Working Together	<ul style="list-style-type: none"> • knows how to do some things in a group, but group work is challenging • agrees with some of the group ideas 	<ul style="list-style-type: none"> • works well in a group • likes sharing ideas and the workload • could be doing more to help the project along/ could be doing more to help • listens to teacher’s and students’ ideas and input 	<ul style="list-style-type: none"> • excels at working in a group • makes sure that everyone is heard, that their ideas are recorded and that everyone has a clearly defined role and set of responsibilities • builds on others’ ideas and adds new ideas
Prototyping	<ul style="list-style-type: none"> • constructed a first version of the product, but didn’t follow a plan • could explain one reason why it changed 	<ul style="list-style-type: none"> • constructed a first version • looks exactly like the drawing with no alteration/discussion around 2D design choices 	<ul style="list-style-type: none"> • constructed a first version of the product using drawing • reflected on the design as they built the prototype and made changes to tools, materials, and procedures; could defend those choices
Testing	<ul style="list-style-type: none"> • did a few tests, acted on the results • made one change • could explain a little about the results and what they meant 	<ul style="list-style-type: none"> • tested the product • listened to peer feedback • may or may not have followed through on peer feedback • made some changes • may or may not have tested it again 	<ul style="list-style-type: none"> • tested the product • listened and acted on peer feedback • made changes and tested our product again • repeated testing until fully satisfied with the product
Making / Applying Skills	<ul style="list-style-type: none"> • constructed the final product but may have needed teacher help • needed reminders to use tools and materials in a safe way 	<ul style="list-style-type: none"> • constructed the final product • used tools and materials in a safe manner with one or two reminders 	<ul style="list-style-type: none"> • constructed the final product incorporating planned changes • used tools and materials in a safe manner

Teacher Rubric: Sharing and Evaluating

	1	2	3
Presenting Information	<ul style="list-style-type: none"> • can demonstrate their product • can give a basic explanation of design process • can answer some but not all questions about design choices 	<ul style="list-style-type: none"> • can demonstrate their product and give a detailed explanation of how they came up with their design • can answer most questions about their design choices 	<ul style="list-style-type: none"> • can demonstrate their product in an attention grabbing/eye catching way • can answer a variety of questions about their design choices
Reflecting / Evaluating	<ul style="list-style-type: none"> • can somewhat tell whether or not their product meets the objective • has some idea of the objective • has some understanding of the value of reflection • can give some constructive feedback • can sometimes receive feedback from others 	<ul style="list-style-type: none"> • can determine whether or not their product meets the objective • can identify a few things they could have done differently to improve the outcome • can identify why their investigations were fair tests, but may not know how they could have improved them • can give constructive feedback, but sometimes don't know what to say or how to say it • can receive feedback, but don't always act on it 	<ul style="list-style-type: none"> • can determine whether or not their product meets the objective • can identify steps to improve on their work • can identify why or why not their investigations were fair tests • can suggest improvements to their investigative methods • can give constructive feedback/can receive and act on feedback