**TEACHER GUIDE TEMPLATE Design Challenge Title: ( quick name of title)**

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| 1. **What is the design challenge? What are the requirements of the design challenge? ( 3 min.)**

( tell what the task is – instead of ‘make a cool car’ clarify with ‘make a cool car that will roll two feet on a flat surface and is made of at least 4 different materials) |
| 1. **What requirements does the person or animal have that need to be in the design?**

(i.e., Imagine you are a cat, what would make a pet carrier for you comfortable? Or, ask the person you are designing a lunch box for what they need. This step involves imagining, empathy, questioning and listening.)What do you or your partner look for in the item you are designing? (2x 3min)Questioning **?** Listening Empathy * this part is key to feeling what the need is for, and for hearing what the other person is saying – interview, paraphrase and document key points – not word for word
* try to not evaluate the ideas at this point – focus on active listening and recording
* this Is a fantastic place to pause and develop rich vocabulary both in first and second language – so be prepared to spend lots of time fleshing out new words that will become part of active vocabulary both during and after the activity
 | 1. **What else might I need to know before starting? ( time flexible)**

(Sometimes more information is needed before designing, i.e., how big is the cat that I am designing the pet carrier for? You can find the answers in books, on a computer or by asking someone.)* this section may or may not apply to varying degrees – it is a point to consider during the conversations so is worth mentioning
* some design processes may not require this step so teachers can use their discretion

Look in books Use a computer Ask someone  |
| 1. **Sketch your design (3 different ideas.) ( 6 min)**
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| key ideas – * draw quickly, not too much attention on getting each detail right
* provide time prompts as this section progresses
* encourage one design to be as wildly imaginative as possible
* can add a few labels for clarification
* consider ‘no erasing’ as a criteria
* push for variety in ideas - we want creativity which does not come from only the first plan
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| 1. **Ask for feedback from your partner about all of your sketch ideas. ( 2 x 3 min)**

Questioning **?** Listening Empathy * **Value all of the efforts in the sketches without judging**
* **Ask critical questions to stimulate the creative process i.e. ‘How did you solve…”**

 **Or “what makes the device do…? Or ‘what would be the best material for …”*** **Have each person explain which is their favourite design and why**
* **This is a time for sharing of ideas to improve each design as well**
 | 1. **Re-design and re-sketch your best idea, based on the feedback. ( 3 min.)**
* **After completing Box 5, go back to individual space to revise and improve best design**
* **Use feedback from partner to guide revisions as well as your own ideas**
* **QUIET time – only individual sketching efforts for this period**
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| 1. **Between you and your partner (or group), choose one of your designs to make. Sketch it. ( 6 min.)**
* **This stage requires negotiation and often some compromise**
* **The chosen design can contain elements from all partners**
* **Everyone must be in agreement about which design to use**
* **Some groups will use most of their time choosing**
* **Once ALL team members have sketched the same design that has been chosen, construction may begin**
* **Not all teams will work through this at the same pace**
 | 1. **Make it! Test it! Re-design it!**
* **Time will be flexible based on the nature of the challenge**
* **Give a set time and announce time remaining from time to time**
* **Early finishers can have an extension “What if…”**
* **Leave ample clean up time BEFORE the gallery walk – good modeling of workplace etiquette and a very important job skill**
1. **Do a walk around where each team presents their project to the class.**
* **Celebrate each group as they present!**
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| SAFETY - before the build phase, or at the start of the session:* go over the materials area (pantry) where there are shared resources to be consumed
* show where the stations are for tools that do not move ( hot glue table, sawing table, exacto knife table)
* demonstrate safe use of specific tools ( or even better, demo this in the days prior to challenge)
* mention first aid protocols
* safety glasses where applicable
* after the build, reuse or deconstruct any materials that can be repurposed for a future challenge
 | 1. **My reflections…**
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