**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)** | | | |
| 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** |
| 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!** |
| 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…** |