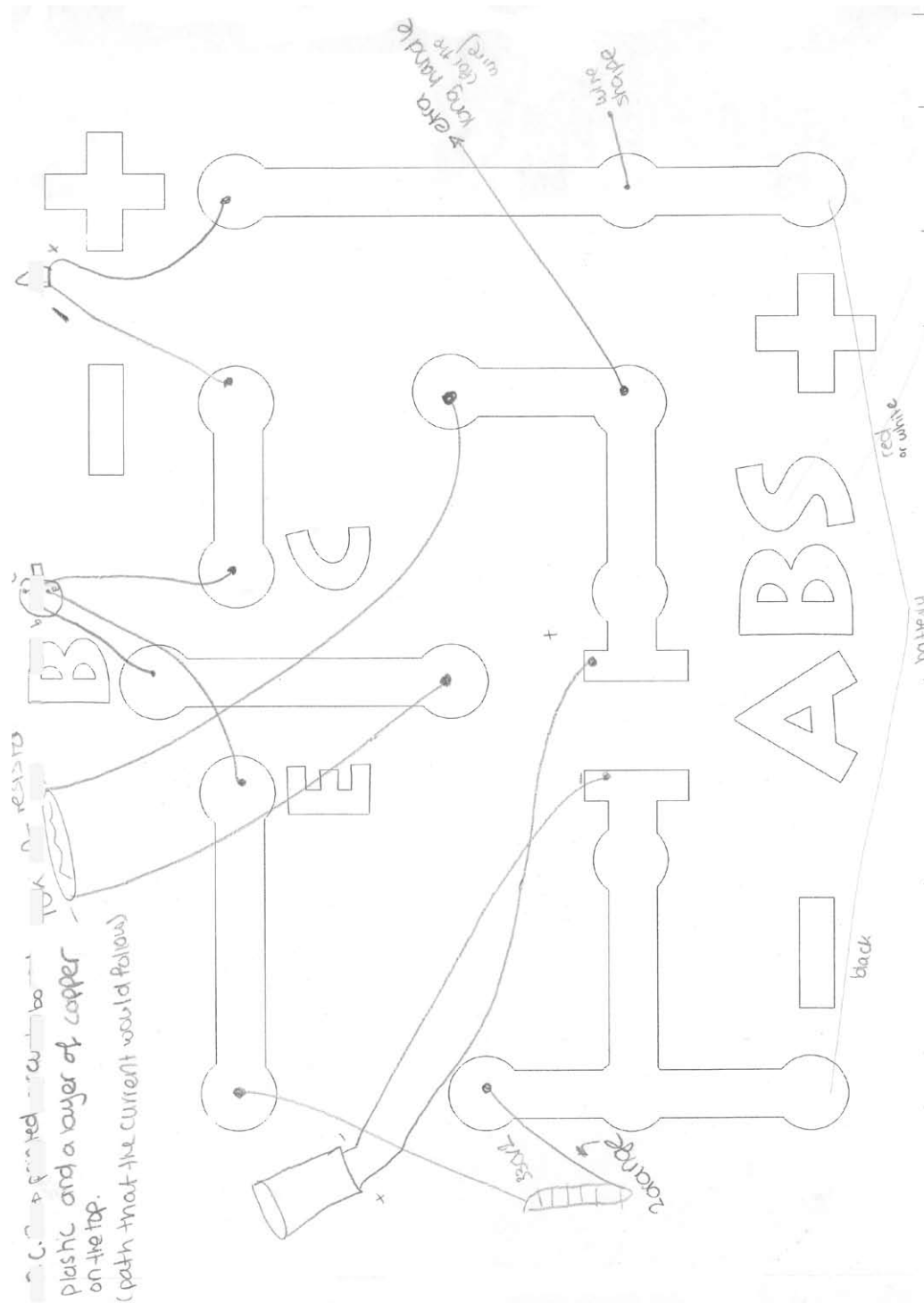
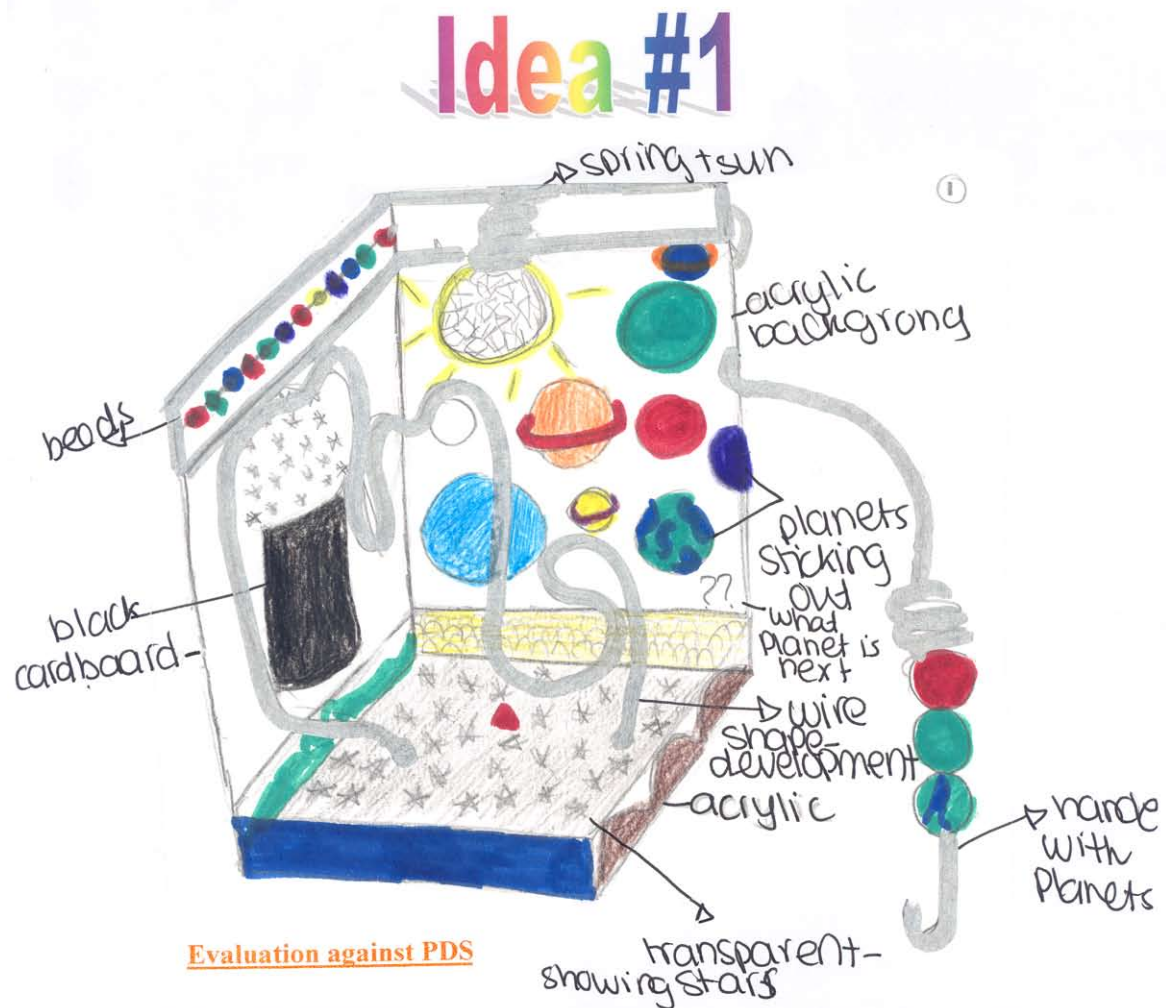


Criterion B: design

This is the printed circuit board, the components used and soldered to it are:

1. transistor 2. resistors 3. batteries 4. capacitors 5. wires





Evaluation against PDS

Essential	Check list	Desirable	Check list
Printed circuit board	✓	Audible output(buzzer or speaker)	✗
Wire shape	✓	Using more than one LED	✗
Compartment for circuit	✓	Using recycled parts	✗
Handle-wire follower	✓	Combining acrylic and wood to use them in the same compartment	✓
Visible output(LED)	✓	Wire shape related to the theme	✓
Having a theme	✓	Colorful and creative	✓
Done within a specific period(creation period-3weeks)	✓	Shaping the base(circular or rectangular) and being creative in decorating it	✓
Not too complicated	✓	Parts sticking out of the background or compartment	✓
Having a potential significance	✓	Place to put the handle	✓
Using available materials	✓	Using materials from nature eg.leaves	✗
Using cheap materials	✓	Having a background that contains different shapes.	✓
Related to the theme	✓	Joining materials such as wood, acrylic and metal to produce the game	✓
Having a background related to the theme	✓		
Total/13	13	Total/12	8

Explanation of idea #1:-

This idea reflects the theme outer space. It's simple and easy to understand as my target group are the mentally disabled. I have an acrylic background, with planets sticking out made either by paper or clay. The sun is hanging down on the planets by a spring. I have decided to add another piece on the background.

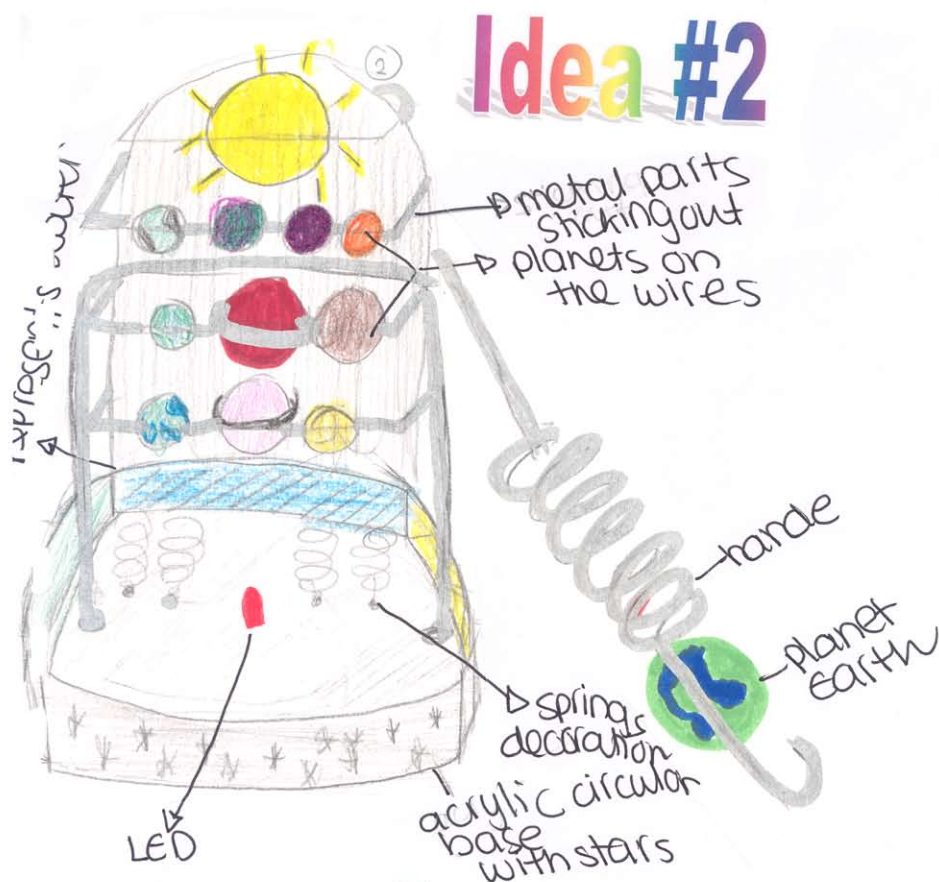
This piece shows a black piece sticking out with stars sticking out of it, this mainly shows that we are coming out of our black age to discover all those amazing facts about outer space. The beads on top, are just used to make the game more colorful. The sides of my acrylic base represent different surfaces on earth such as grass, desert and water. Under the acrylic I am aiming to decorate the base with stars which would show under the transparent plastic.

The wire shape starts short and increases in length to show our developments in outer space.

The handle, has 3 of the planets made out of golf balls attached to it. In general I'm impressed with the idea.

Self evaluation of the idea:-

I think that all in all this idea was successful. I was able to stick to my theme to produce a simple idea with a great potential significance. I was able to fulfil my Essential specifications yet got 8/12 in the desirable. However a weakness I find in the game is the way it seems unbalanced in shapes and colors, such as adding a piece to the background only from the left side. On the other hand, I like the idea of the stars coming out of a black surface representing the world coming out of the black uneducated era.



Evaluation against PDS

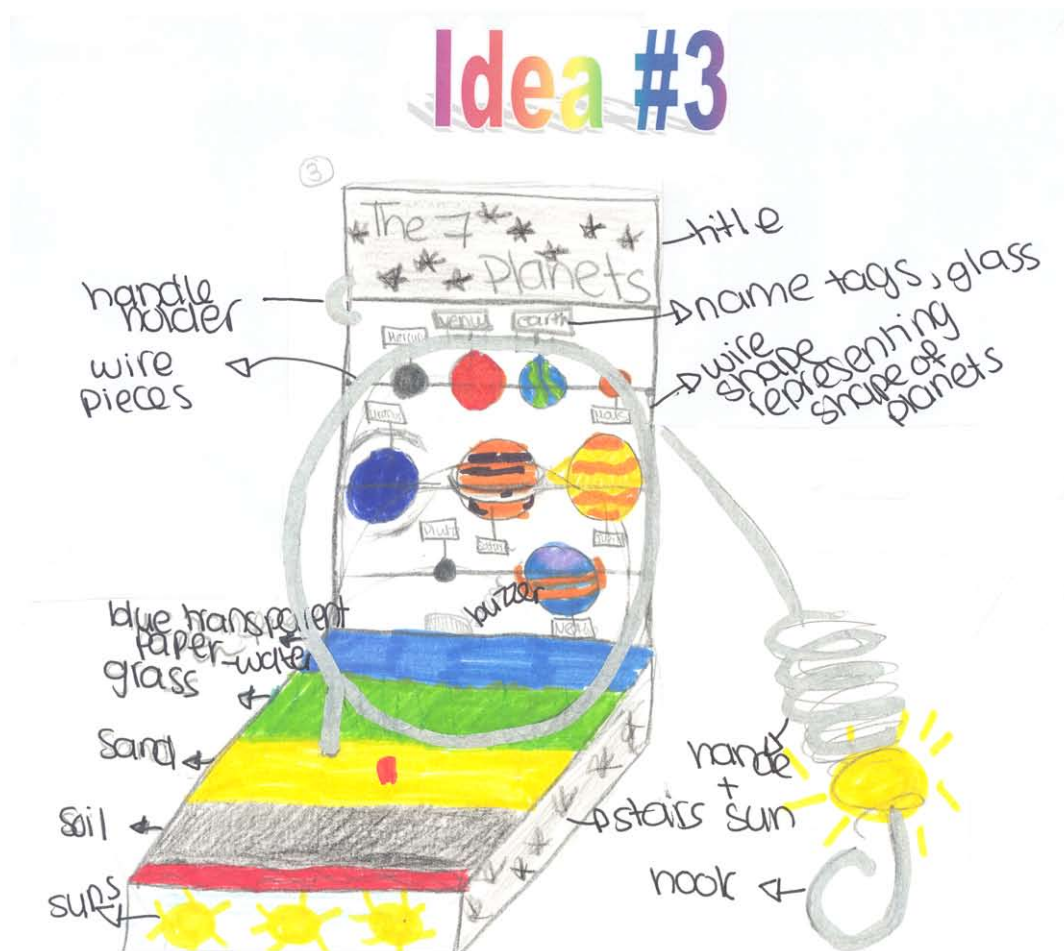
Essential	Check list	Desirable	Check list
Printed circuit board	✓	Audible output (buzzer or speaker)	✗
Wire shape	✓	Using more than one LED	✗
Compartment for circuit	✓	Using recycled parts	✓
Handle-wire follower	✓	Combining acrylic and wood to use them in the same compartment	✗
Visible output (LED)	✓	Wire shape related to the theme	✗
Having a theme	✓	Colorful and creative	✓
Done within a specific period (creation period-3 weeks)	✓	Shaping the base (circular or rectangular) and being creative in decorating it	✓
Not too complicated	✓	Parts sticking out of the background or compartment	✓
Having a potential significance	✗	Place to put the handle	✓
Using available materials	✓	Using materials from nature eg. leaves	✗
Using cheap materials	✗	Having a background that contains different shapes.	✓
Related to the theme	✓	Joining materials such as wood, acrylic and metal to produce the game	✓
Having a background related to the theme	✓		
Total/13	11	Total/12	7

Explanation of idea # 2

I could definitely say that this idea has 100% to do with my theme, yet I have decided to change the background as I am not aiming to decorate the wooden background itself, but stick metal parts out of it that would hold the plants made by colored small bouncing balls that come in different sizes. The wire shape is simple so that my target group would not find a difficulty in playing the game. My acrylic base also represents the different colors of the surfaces on earth so as to teach the mentally disabled about planet Earth. The extra metal pieces I have will be shaped as springs under the transparent base as a method of decoration. The handle has to do with the base. It includes a round planet Earth on it so as to further aware my target group of how earth looks like.

Self evaluation of the idea

This idea has not really been successful according to my PDs as it has scored 11/13 in the essentials and 7/12 in the desirables, therefore I'm not really satisfied with it. On the other hand, I like the idea of the metal parts sticking out with the planets on them. Since the game would also have something to entertain children. The planets would also be able to turn around the wire which is quite interesting. By contrast I do not really like the design and shape of the base as I find it too complicated, neither do I like the fact that the wire shape has nothing to do with my theme.



Evaluation against PDS

Essential	Check list	Desirable	Ceck list
Printed cicuit board	✓	Audible output(buzzer or speaker)	✓
Wire shape	✓	Using more than one LED	✗
Compartment for circuit	✓	Using recycled parts	✓
Handle-wire follower	✓	Combining acrylic and wood to use them in the same compartment	✗
Visible output(LED)	✓	Wire shape related to the theme	✓
Having a theme	✓	Colorful and creative	✓
Done within a specific priod(creation period-3weeks)	✓	Shaping the base(circular or rectangular) and being creative in decorating it	✓
Not too complicated	✓	Parts sticking out of the background or compartment	✓
Having a potential significance	✓	Place to put the handle	✓
Using available materials	✓	Using materials from nature eg.leaves	✓
Using cheap materials	✓	Having a background that contains different shapes.	✓
Related to the theme	✓	Joining materials such as wood, acrylic and metal to prodece the game	✓
Having a backgroud related to the theme	✓		
Total/13	13	Total/12	11

Explanation of idea #3

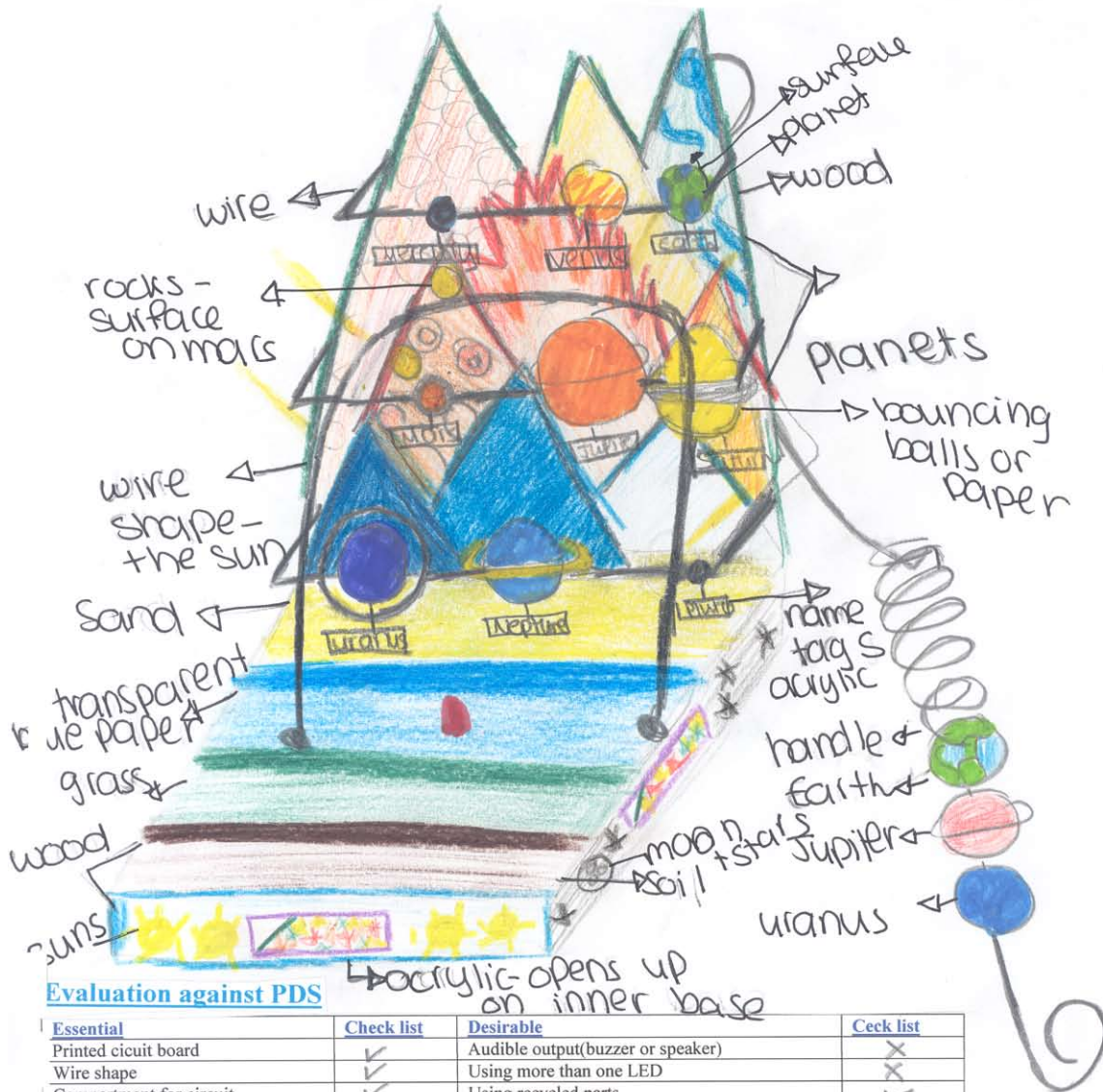
This idea depends on a different aspect in relation to the previous ideas I have demonstrated. I have no actual background yet I have decided to use wire pieces with the planets attached to them. The planets would either be made out of bouncing ball or paper using the paper machine. Above this part I am aiming to attach a cardboard showing the title with stars to decorate. From the planets I am aiming to attach glass pieces with the name of the planet on each, written using glitter. The wire shape shows a circle which is the shape of most of the planets.

Coming to the base, it shows surfaces on Earth, I am going to specify an area for each different surface. One area would include sand to show a desert another would show grass which represents agriculture and so on. Underneath the top base I am planning to decorate those 3 parts using suns and stars to show contrast between day time and night time. My output devices are the LED and a buzzer.

Self evaluation of idea #3

This is the most successful idea up until now it got a full mark in the essentials and 11/12 in the desirables. My strengths were the background along with the base showing surfaces. My weakness is the top which shows the title. I happen to like the nanche too, all in all this idea was successful and is nominated for my final idea.

Idea #7/Chosen Idea



Evaluation against PDS

Essential	Check list	Desirable	Check list
Printed circuit board	✓	Audible output(buzzer or speaker)	✗
Wire shape	✓	Using more than one LED	✗
Compartment for circuit	✓	Using recycled parts	✓
Handle-wire follower	✓	Combining acrylic and wood to use them in the same compartment	✓
Visible output(LED)	✓	Wire shape related to the theme	✓
Having a theme	✓	Colorful and creative	✓
Done within a specific period(creation period-3weeks)	✓	Shaping the base(circular or rectangular) and being creative in decorating it	✓
Not too complicated	✓	Parts sticking out of the background or compartment	✓
Having a potential significance	✓	Place to put the handle	✓
Using available materials	✓	Using materials from nature eg.leaves	✓
Using cheap materials	✓	Having a background that contains different shapes.	✓
Related to the theme	✓	Joining materials such as wood, acrylic and metal to produce the game	✓
Having a background related to the theme	✓		
Total/13	13	Total/12	10

Explanation of idea # 7

This is my final idea, it combines ideas 2, 3, 4, I have chose the part I liked from each of those ideas to come up with idea # 7. The background and base are made out of wood, yet I have put small acrylic windows on the lower parts of the base, as to show the inner part of the compartment which would be decorated with colorful stars inside. As for the background, I am aiming to have it in the shape of mountains, where each mountain represents the surface of a particular planet.

This planet would be on a piece of wire sticking out of the background. ^{of its surface} The planets would either be made out of paper by using the paper machine, or the bouncing balls that come in different sizes. Both the ^{background} base and the planets are to be painted using special paint.

From each of those planets, I am going to hang a name tag written on a piece of acrylic, using glitter. As for the wooden top base, it represents surfaces on earth, sand for the desert, transparent blue paper for water, grass for agricultural land and soil for normal land.

Under the base, the wood is designed with suns and a blue background in the front and a moon with stars on both other sides. The wire shape shows a sun, its rays would stick on parts of the mountain. As for the handle, it is made out of wire, along with 3 planets on it which are earth, jupiter and neptune. The LED is located in the middle.

Self evaluation of idea #7

This idea got a full mark in the essentials and 10/12 in the desirables since it's my final idea, I am aiming to modify my PDS so that this idea would get a full mark in both the specifications.

I really like the way I have joined my strengths in 3 ideas to produce this final idea, and in my opinion, this is considered a major strength.

Although the background seems complicated in the drawing, in real life it's not, it's simple and easy to do. I have joined different substances to produce the final idea, therefore it got a good mark in both specifications. A weakness

I find is the handle, since the idea of almonds has previously been used. I like the idea of having acrylic windows opening up on the inner compartment with colorful stars.

In addition I also like the idea of the acrylic name tags, they would look really cute. All in all, I'm satisfied with this idea, to have it as a final design.

General evaluations of each idea

General evaluation:

Evaluation of marks

Essential specifications		Desirable specifications	
1-5	Very bad	1-4	Very bad
6-8	Needs improvement	5-7	Needs improvement
9-11	Good	8-10	Good
12-13	Excellent	11-12	Excellent

Idea #1:

This idea got 13/13 in the essential specifications, and 8/12 in the desirable specifications. The essential mark is excellent, where as the desirable marks, is good, and therefore, some of its parts need improvement. My strengths, where the black cardboard, and the stars, along with the idea behind it. My weakness was the wire shape, as its too complicated for the mentally disabled to play with. This idea did not contain materials from nature, nor recycled parts; this made it lose a large part of its total marks.

Idea #2:

This idea got 11/13 in its essential specifications, which is good, and 7/12 in its desirables, which means that it needs improvement. What made this idea lose marks, was the fact that its complicated, and the base was made out of only acrylic, in addition the wire was not related to the theme, which is a major problem. However my strengths were the way I decided to put the planets, which is on a wire, where the could turn around it, and would be a subject of entertainment. However, my weaknesses were the way the wire shape is not related to the theme, along with the acrylic base which is too complicated to make.

Idea #3:

This idea got 13/13 in its essential specifications, which is excellent, and 11/12 in its desirables which is excellent too, what made it get this mark, in the desirable specifications was the way I decided to use to output devices which are the LED and the buzzer, however, my strengths where the way I decided to use materials from nature such as sand and soil to show surfaces on earth, on the base, the circular wire shape, which represents the she of the planets, and the way I displayed my planets. On the other hand my weaknesses are the handle, and its design, the lower part of the base, which is not well designed, and the title of the work, which is not well displayed.

Idea #4:

This idea got a 12/13 in the essential specifications which is excellent, and 7/12 in the desirable specifications, which means that it needs improvement. What made this idea lose marks was that it is complicated and only wood is used for the base. The idea also does not contain any natural materials, and this made it lose some marks. My

strengths were the use of the mountains that represents the surfaces, along with the wire shape, which is simple, yet related to the theme. However my weaknesses are the handle, and the design of the base in general as it's hard to put the sun and moon on the wooden compartment.

Idea #5:

This idea got a mark on 12/13 in its essential specifications, which is excellent, and 7/12 in its desirable specifications which means that it needs improvement. What made this idea lose marks was the fact that it's not made out of cheap materials, since it's hard to produce a triptych wooden design, and it costs a lot of money. The idea is simple, it has not parts sticking out of the background, and it does not contain materials from nature, this unfortunately made it lose marks. My strengths were the idea of having 3 parts to make the background, and the design of the wire shape. However my weaknesses are that the background is hard to make since it's hard to put those pieces together, and the sun is not proportional according to the base.

Idea #6:

This idea got 10/13 in its desirable specifications, which is good, and 7/12 in the desirable specifications, which means that they need improvement. My strengths were the way the idea is too hard to produce since the astronaut made out of clay, is quite complicated. However, I like the design of the wire shape, and the background base. I don't really like the handle, and can say that it's a weakness. I happen to like the idea, but it would be too complicated to make, and does not teach anything about the planets.

Chosen Idea #7:

This idea got 13/13 in the essential specifications which is excellent and 10/12 in the desirable specification which is good. Since this is my chosen idea; I will modify my PDS so that it would get full marks in both the specifications. I really like the idea, and find no weakness, However my main strength is the combination of different ideas to produce this final idea.

Ranking of Ideas

Essentials	Idea#	Mark/13	Desirables	Idea#	Mark/12
1 st	1 and 3 and 7	13	1 st	3	11
2 nd	4 and 5	12	2 nd	7	10
3 rd	2	11	3 rd	1	8
4 th	6	10	4 th	2 and 4 and 5 and 6	7
			5 th		
			6 th		
			7 th		

Idea # 3 was the winner; it got one mark higher in the desirables than idea #7, which is the final idea, just because it contains a buzzer as an audible output. However I realized that many ideas got a 7/12 in the desirables which is not a very good mark, this is because in my opinion, my desirable specifications were hard to fit each of those ideas.