NASA

 Astronaut Training Manual

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Astronaut: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mission Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mission One: Crew Assembly

As a team, you will assemble a puzzle quickly and correctly to understand the importance of dexterity and hand-eye coordination; you will also practice communication and problem-solving skills.

Observations before activity:

Time it took your team to complete the mission:

Your team’s time compared to other teams:

Observations at the end of the activity:

Mission Two: Building an Astronaut “Core”

You will perform the Commander Crunch and the Pilot Plank to improve the strength in abdominal and back muscles. As you train like an astronaut, record your observations about improvements in core muscles strength during this physical experience in your Mission Journal.

Predict how many “Commander Crunches” you can do in one minute:

How many did you do in a minute?

Describe how you feel before the “Pilot Plank”.

Describe how you feel after the “Pilot Plank.”

Mission Three: The Speed of Light

You will perform a time reaction activity using a ruler to practice your hand-eye reaction time and improve your concentration.

Complete the chart as you collect data on your trials:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Trial One(distance in cm) | Trial Two(distance in cm) | Trial Three(distance in cm) | Trial Four(distance in cm) | Trial Five(distance in cm) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

Who was the best team mate at this test?

What patterns/conclusions can you make about your data?

Mission Four: Do a Space Walk

You will perform the “bear crawl” and “crab walk” to increase muscular strength and improve upper and lower body coordination. You will also record observations about improvements in muscular strength and upper and lower body coordination.

Describe how you feel before you do the “bear crawl.”

Describe how you feel after you do the “bear crawl.”

Which is easier, the “bear crawl” or the “crab walk”? Why do you say this?

Can you think of a situation where astronauts would need strength and coordination? Describe this situation below.

Mission Five: Jump for the Moon

**You will perform jump training with a rope, both while stationary and moving, to increase bone strength and to improve heart and other muscle endurance.**

Do you think it will be easier to jump rope in a stationary (still position) or in a moving position? Why do you say this?

How do you feel after your first set of stationary jumps?

Second set of stationary jumps?

Third set of stationary jumps?

Was it easier to do the stationary jumps or the moving jumps? Why do you say this?

Station Six: Crew Strength Training

**You will perform body-weight squats and push-ups to develop upper and lower body strength in muscles and bones.**

How do you feel before your squats?

How do you feel after the squats?

Which repetition (1,2, or 3) was the most difficult to do?

Which was more difficult: the squats or the pushups? Why do you say this?

How did you feel when this mission was done?