Appendix

Instructions

Welcome

Please enter your participant label.

Next

Please verify your participant ID (your participant label) below

Confirm your ID label below

Next

Please input your student email.

Input your Email

Confirm your Email

Next

Please input your first name.

Input your first name

Confirm your first name

Next

Computer ID

Input your Computer ID

Confirm your Computer ID

Next

Instructions Part 2

Instructions Allocation Task

Individual task - Reasoning skills

This task involves three short tests (4 minutes each):

1. Numerical reasoning
2. Analogical reasoning
3. Spatial reasoning

For each test, we will give you an example question, then you'll have 4 minutes to answer as many questions as you can.

Next

Instructions Numerical

Instructions Numerical Reasoning Task

1. Numerical reasoning

These questions focus on number sequences. You have to figure out what comes next In the example below, you can see that there is a pattern in the 'gap' between adjacent numbers in the sequence. The difference between 13 and 9 is -4. The difference between 9 and 14 is +5. The difference between 14 and 8 is -6, and so on. This tells us that the answer will be 15 minus 8 = 7.

Please note: each correct answer is worth 1 point, each incorrect one costs you 0.5 points.

17. QUESTION

What is the next number in the series?

13, 9, 14, 8, 15,

- 7
- 8
- 15
- 23
- 16

Next

Next

Instructions Numerical Reasoning

When you click next, you will have **4 minutes** to complete as many Numerical questions as you can.

Please note: correct answers are worth +1 point; incorrect answers cost you 0.5 points. Don't just blindly guess!

Your current score will be visible on the right

You time begins when you click next.

You cannot use a calculator during this task

Next

Numerical Reasoning

Time left to complete this page: **3:21**

What is the missing number in the sequence: 70| 71| 76| ?| 81 | 86 | 70 | 91

- ○ 70
- ○ 71
- ○ 80
- ○ 96
- ○ 86

Next

Score in Numerical:

0

Instructions Analogical

Instructions Analogical Reasoning Task

2. Analogical reasoning

These questions require you to make complete analogies. In the example below, you are looking for a pair that is analogous to "Temperature:Flame". Here, we notice that 'temperature' is an important property of a flame. Looking down the list, we see that the only pair with a similar structure is **'wind:velocity'** (velocity is an important property of wind).

Please note: each correct answer is worth 1 point, each incorrect one costs you 0.5 points.

Choose a pair that is analogous to **Temperature: Flame**

- ○ Tornado: Storm
- ○ Freeze: Cold
- ○ Sea level: Tide
- ○ Wind: Velocity
- ○ Tropical: Warm

Next

Instructions Analogical Reasoning

When you click next, you will have **4 minutes** to complete as many Analogical questions as you can.

As before: correct answers are worth +1 point; incorrect answers cost you 0.5 points. Don't just blindly guess!

Your current score will be visible on the right

You time begins when you click next.

Next

Analogical questions

Time left to complete this page: **1:37**

Which of the following is most clearly OPPOSITE of the word: SMART

- silly
- strong
- unhinged
- ingenious
- intelligent

Next

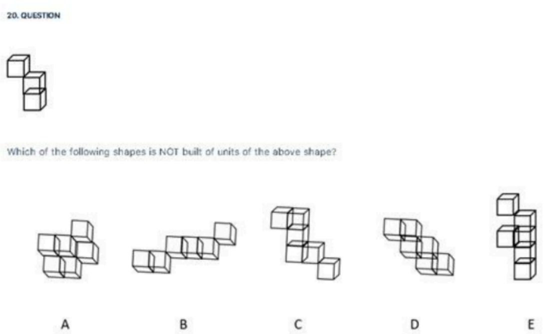
Score in Analogical:
0

Instructions Spatial

Instructions Spatial Reasoning Task

3. Spatial reasoning

These questions focus on spatial relationships. In the question below, you need to figure out which of the shapes (A to E) cannot be built using the 3-block template at the top of the question. If you look closely, you can see that option C is the answer: the blocks at the top of option C cannot be built by the 3-block template.



Next

Instructions Spatial Reasoning

When you click next, you will have **4 minutes** to complete as many Spatial questions as you can.

As before: correct answers are worth +1 point; incorrect answers cost you 0.5 points. Don't just blindly guess!

Your current score will be visible on the right

You time begins when you click next.

Next

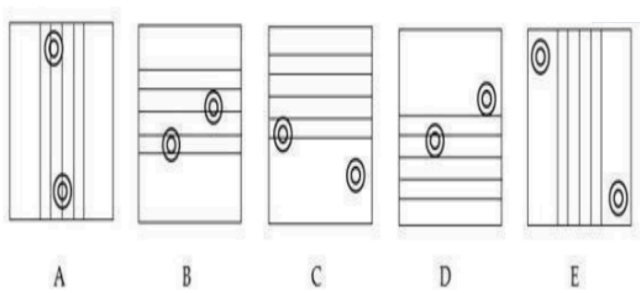
Spatial questions

Time left to complete this page: **3:53**

Score in Spatial:

0

Which of the figures below does NOT belong with the others?



○ A ○ B ○ C ○ D ○ E

Next

Thank you for participating in this task. Click to proceed

Next

Instructions Part 3:

Instructions Group Tasks

In this round of the experiment you will either be a "Manager" or a team member.

Do you want to be a manager?

Managers are responsible for directing the group and making final decisions. The role will involve communicating with your team members, delegating, collating information and making decisions

Manager's whose groups perform in the top 40% of all groups will earn substantially more than other team members in the session. Manager's whose group performance is in the bottom 40% will have substantially lower earnings than other team members in the session

On average, Managers and team members will receive the same payment.

You should choose the role that best fits your skills.

Indicate how much you'd like to be manager in the upcoming experiment, on a scale of 1 (I really don't want to be a manager) to 10 (I really do want to be the manager). Please be as honest as possible, as your preference could be taken into account. However, also note that we cannot guarantee you will get your preferred role

On a scale of 1 to 10, where 1 indicates a strong preference for NOT being the Manager and 10 indicates a strong preference for being the Manager, how much do you want to be the Manager?

1 ○○○○○○○○○○ 10

Next

Please wait

Waiting for all players to arrive before starting Group Task

Switch computers

If your Individual ID number is 8, please switch to computer ID number 10

Once you've switched computers please re-open the experiment URL to input your ID

Next

You will manage 4 teams in the experiment. As a manager, your bonus payment depends on your teams' performance. We will randomly select one of your 4 teams.

You bonus will be:

£12 if the group performs in the top **40%** of groups

£4 if the group performs in the bottom **40%** of groups

£8 otherwise

Next

You will be a 'team member' in 4 teams across the study.

Your job is to assist your team's manager.

You will receive a fixed bonus payment of £8

Next

Group Information

Your ID number is No. 5, you have been grouped with the ID's 2 and 9

Welcome to your new team!

In this task your role is Manager

You will be working together for the next **10 minutes.**

Please take the next 60 seconds to introduce yourselves to your team members

Welcome to your new team!

In this task your role is team member

You will be working together for the next **10 minutes.**

Please take the next 60 seconds to introduce yourselves to your team members

Instructions Group Reasoning Task

This task is similar to the allocation task you completed at home. However, this version is a team based task. The goal is to score as many points as possible by answering reasoning questions. There are **three modules:**

1. Numerical reasoning
2. Analogical reasoning
3. Spatial reasoning

You have seen all three types of questions in the individual phase of the experiment you just completed

Next

You will manage 4 teams in the experiment. As a manager, your bonus payment depends on your teams' performance. We will randomly select one of your 4 teams.

You bonus will be:

£12 if the group performs in the top **40%** of groups

£4 if the group performs in the bottom **40%** of groups

£8 otherwise

Next

You will be a 'team member' in 4 teams across the study.

Your job is to assist your team's manager.

You will receive a fixed bonus payment of £8

Next

Instructions for team members

Instructions Group Allocation Task

You have been assigned the role of **team member**. You have four jobs:

1. Complete questions as quickly and accurately as possible
2. Keep an eye on the score of the module you're working on
3. Support the Manager (who is the person in the middle of the group)

Next

Instructions Group Reasoning Task

The team member Role

You are a **team member** in this group. The Manager will assign different modules to you. These may include:

- Analogical reasoning
- Numerical reasoning
- Spatial reasoning

Next

Instructions Group Reasoning Task

Your group's Manager will be provided with information about your group's strengths, based on the individual tests you completed in the first phase of the experiment. They will use this information to make a decision about who should tackle different types of questions.

Every two minutes there will be a 1-minute pause. In total there will be 2 pauses, and you will have 6 minutes to answer questions. You can talk to the Manager at any point during the task. **The Manager also has the opportunity to reassign modules at any point in the experiment.**

The type of question you're working on may change.

Next

Instructions Group Reasoning Task

SCORING

For each module, you receive 1 point for a correct answer

If you get an **answer wrong you lose 0.5 points.** Don't just blindly guess.

Your group's score is the lowest module score. For example, if your group scores 6 on the analytical module, 7 on the numerical module, and 2 on spatial module, the team score will be 2 (the lowest of 6,7 and 2).

If your group scores 8 in the analytical module, 7 on the numerical module, and 9 on the spatial, your OVERALL TEAM SCORE will be 7 (the lowest value of 8,7 and 9).

Next

Instructions Group Reasoning Task

Check for understanding

Suppose a team has the following scores on three modules:

- Analogical reasoning: 3 points
- Numerical reasoning: 2 points
- Spatial reasoning: 10 points

What will be the overall team score?

Next

Instructions Group Reasoning Task

Your Manager may ask you about the current score in the module you are working on. The score **for this module** will be shown in the top right corner of your screen. The Manager knows the overall score, but not the module score

Next

Instructions Group Reasoning Task

Review

The task will be begin shortly. Your group Manager is just reviewing some final instructions. As a reminder:

- Your main job is to complete questions as quickly and as accurately as possible
- When you are working on a module, you have information about the Module Score that may be of use to the Manager
- The total time for the task is **8 minutes** with two pauses included
- You and your group will have **6 minutes** to score as many points as possible
- Every two minutes there will be a **1 minute** pause for the Manager to gather the group and discuss
- The Manager can reassign modules at any time
- You can talk to the Manager at any point during the task
- You cannot give other people the answer to their questions

Your time will begin when your group Manager is ready to begin.

Next

Instructions for managers

Instructions Group Reasoning Task: Manager

You are the group **Manager**. You have four jobs:

1. Assign your team members to different modules (analogical; numerical; spatial)
2. Communicate with team members about strategy
3. Monitor progress, and change assignments if needed
4. Work on a module yourself

To start the task, you need to assign each team member (including yourself) to one module. If you like, you can assign multiple people to the same module.

Next

Instructions Group Reasoning Task

SCORING

For each module, you receive 1 point for a correct answer

If you get an **answer wrong you lose 0.5 points.** Don't just blindly guess.

Your group's score is the lowest module score. For example, if your group scores 6 on the analytical module, 7 on the numerical module, and 2 on spatial module, the team score will be 2 (the lowest of 6,7 and 2).

If your group scores 8 in the analytical module, 7 on the numerical module, and 9 on the spatial, your OVERALL TEAM SCORE will be 7 (the lowest value of 8,7 and 9).

Next

Instructions Group Reasoning Task

Check for understanding

Suppose a team has the following scores on three modules:

- Analogical reasoning: 3 points
- Numerical reasoning: 2 points
- Spatial reasoning: 10 points

What will be the overall team score?

Next

Instructions Group Reasoning Task: Manager

You are the team's **Manager** and are responsible for making sure the team scores as many points as possible.

Your first job is to **assign** team members to different modules. To help you, you will be provided with information about how your team members performed on a previous test of analogical, numerical and spatial reasoning.

Next

Instructions Group Reasoning Task: Manager

Your second job is to communicate with team members about strategy. You can communicate at any point during the task.

Your third job is to **monitor** progress. On the top right of your screen you will see the team's current overall score. **This counter is only visible to you.** Your team members can tell you about the score in the module they have been assigned to, but they do not know the team score.

For example, if the team member on your left is assigned to the Numerical Module, they could tell you that the current score is 6, but they would not know the Team Score.

Next

Instructions Group Reasoning Task: Manager

If you notice that your group is struggling on one of the modules, you can **change the modules your team members are assigned to**.

For example, if you originally assigned the Analogical module to the player on your left but are finding that progress on the analytic questions is very slow, you could assign yourself to this task. You can reassign at any time during the game!

Also note that the task will pause every 2 minutes, to give you a chance to talk to your team and re-assign, if you choose. This pause will last for 60 seconds.

Next

Instructions Group Reasoning Task: Manager

Your final job is to assign yourself to a module and to work on tasks yourself.

Next

Instructions Group Reasoning Task: Manager

Group task

You and your team members all attempted similar questions in the individual task you just completed. To give you an indication of your team member's aptitude in the different modules, the following tables summarize the scores of your team members on these modules

Score per module & Comp ID	Numerical	Analogical	Spatial	Comp ID
Worker to your right	49	29	11	3
You	10	19	26	2
Worker to your left	5	44	22	1

Next

Note: scores in this example were randomly generated.

Practice Assign page

We will now practice assigning modules

Practice assigning:

- the team member on your right to the Analogical module
- the Spatial module to yourself
- the team member on your left to the Numerical module

	Numerical	Analogical	Spatial
Assign module for Team member to your right:	○	○	○
Assign module for yourself:	○	○	○
Assign module for Team member to your left:	○	○	○

Next

Instructions Allocation Task

Great!

Now it's time for the actual task. When you click next you will once again go to the Assignment Page. This will determine the initial tasks that you and your team members will be working on. **Remember that you are allowed to change these assignments at anytime, as well as during your 2 minute pause**

The button to access the Assignment Page will be always visible to you on the top portion of your screen.

When you click next, your groups time will begin. You will have 6 minutes to score as many points as possible. Remember that your score depends on the minimum score of the 3 modules.

It is possible to assign more than one person to the same module.

NOTE: Your group timer will start ay 8 minutes, this includes your two one minute pauses, you will have 6 minutes to answer questions. There will be a pause every two minutes.

Next

Assign page

Individual Scores

Score per minute per module	Numerical	Analogical	Spatial	Comp ID
Worker to your right	49	29	11	3
You	10	19	26	2
Worker to your left	5	44	22	1

	Numerical	Analogical	Spatial
Assign module for Worker to your right:	○	○	○
Assign module for yourself:	○	○	○
Assign module for Worker to your left:	○	○	○

Next

Note: scores in this example were randomly generated.

*****Task for manager*****

Group Task

Time left to complete this page: **6:13**

Although he had flown many times this was his first flight in a _______

○ Boat
○ Helicopter
○ Kite
○ Train
○ Subway car

Next

Score in Analogical:

0

OVERALL TEAM SCORE:

0

Click here to reassign

Manager screen including the reassign part

Group Task

Time left to complete this page: **7:12**

Although he had flown many times this was his first flight in a _______

○ Boat
○ Helicopter
○ Kite
○ Train
○ Subway car

Next

Score in Analogical:

0

OVERALL TEAM SCORE:

0

Click here to reassign

Use this table to assign Modules to your team members. You can assign a module to more than one team member.

Individual Scores

Score per minute per module	Numerical	Analogical	Spatial	Comp ID
Worker to your right	49	29	11	3
You	10	19	26	2
Worker to your left	5	44	22	1

	Numerical	Analogical	Spatial
Worker to your right	○	○	◉
Manager (You)	○	◉	○
Worker to your left	◉	○	○

****Task for team member*****

Group Task

Time left to complete this page: **6:35**

What would be the next number in the following series: 1| 3| 7| 11| 13 | ?

- 17
- 15
- 19
- 21
- 23

Next

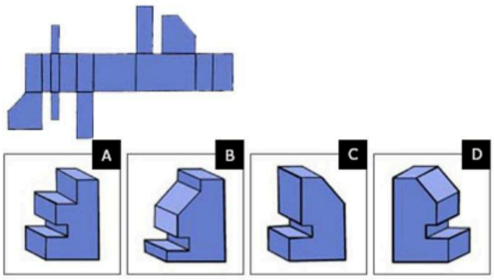
Score in Numerical:

0

You've been assigned Spatial questions

Time to complete questions: **0:32**

Which cube CANNOT be made based on the unfolded cube?



- A
- B
- C
- D

Next

Score in spatial:

0

****Pause****

Paused for 8 seconds.

Score in Analogical:

0

OVERALL TEAM SCORE:

0

This is your team's 60 seconds pause. As the Manager you can instigate a discussion among your Workers. Click to re-assign if you wish to change the modules

Use this table to assign Modules to your team members. You can assign a module to more than one team member.

Individual Scores

Score per minute per module	Numerical	Analogical	Spatial	Comp ID
Worker to your right	0	0	0	6
You	-0.5	1	0	5
Worker to your left	0	0	0	4

	Numerical	Analogical	Spatial
Worker to your right	○	○	○
Manager (You)	○	○	○
Worker to your left	○	○	○

Paused for 19 seconds.

This is your team's 60 seconds Pause, you may talk with your team member and Leader.

Score in this module:

0

Your time is up!

The highest group score in this session in this round was 0.0 the bottom group score was 0.0. The score of the group impacts how much the manager gets paid

Next