Pointing

Q: Point to the **baby stroller** in the image.

General Object Pointing

Q: Point to **the nearest table.**

Spatial Relationship Pointing

Q: Point to **the handle of the bike.**

Semantic Part Pointing

Bounding Box

Q: Give bounding box to the **whisky bottle.**

General Object Bounding Box

Q: Give bounding box to **the most left cup.**

Spatial Relationship Bounding Box

Q: Give bounding box to **the body of the bottle.**

Semantic Part Bounding Box

Trajectory Reasoning

Q: Which arrow indicates the trajectory for hand to reach the bottom black notebook?

A. Red
B. Green
C. Yellow
D. None of the above

Human Hand Trajectory Reasoning

Q: Which arrow indicates the Trajectory for gripper to grasp the spoon?

A. Red
B. Green
C. Blue
D. None of the above

Gripper Trajectory Reasoning

Q: Which arrow indicates the Trajectory to zip the suitcase up?

A. Green
B. Blue
C. Yellow
D. None of the above

Object Trajectory Reasoning

Spatial Reasoning

Q: Watch this video, where is the plastic cutting board?

⊙ Video Clip

A. Behind the dish rack
B. Under the table
C. Near the bed
D. None of the above

Object Localization

Q: According to the video and my Current observation, where is guitar?
A.To front-left of me   C.To back-left of me
B.To front-right of me   D.To back-right of me

⊙Video Clip   🖼 Current Observation

Relative Direction

Q: According to video and my current observation, how to go to toilet?
A. Turn left to the door, move forward
B. Turn right to the door, move forward
C. Turn backward to the sofa, move forward
D. Turn right to the sofa, move forward

⊙ Video Clip   🖼 Current Observation

Path Planning

Task Planning

Q: What happens immediately after `turn on faucet`?

⊙ Video Clip

A. Wash the plate
B. Put plate into the sink
C. Walk to the bin
D. None of the above

Next Action Prediction

Q: what action should I take next in order to prepare the water bottle?

⊙ Video Clip

A. Open bottle
B. Close bottle
C. Fill in bottle
D. None of the above

Task Process Reasoning

Long-horizon

Q: Watch this episode for a robot to pick up a tomato and answer the following questions.

What's the next action for picking up the tomato?
Where is the tomato?
How to navigate to the tomato?
What's the correct trajectory to pick up the tomato?
... ...

Decision Making During Long Horizon Task