Lesson 28
Presentations

Learning Objective

The user will learn how to create a Presentation File.

In this lesson, we'll be creating a presentation of the plane assembly.

You can develop exploded views and other stylized views of an assembly and use them to create drawing views that document your design. The stylized views are saved in a separate file called a presentation file. Each presentation file can contain as many presentation views as needed for a specified assembly. For example, we can turn off the visibility of some parts in a complex assembly and save a design view that shows only certain components.

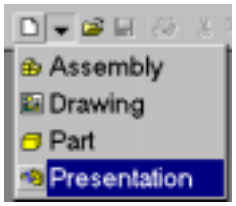
You can automatically explode the view when creating a new presentation view. Assembly constraints will be used to determine the direction that the components will move to create the view.

After placing the view, you can manually tweak individual components in the view to create the optimum view of the components.

TIP: Presentation views do not recognize assembly constraints for any purpose other than creating the first automatic explosion. You can manually tweak a component along any specified vector.

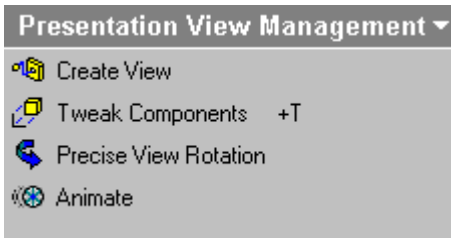
Presentation views are used to:

- Develop a series of views that can be used for assembly instructions.
- Develop a series of views that show the relationship between moving parts of an assembly at different points in a cycle.
- Turn off the visibility of some parts in a complex assembly and save design views that show only certain components



We start by selecting Presentation from the file drop down.

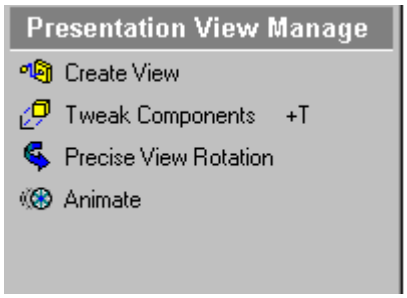
Presentation View Management Tools



We have four tools available to us:

- Create View
- Tweak Components
- Precise View Rotation
- Animate

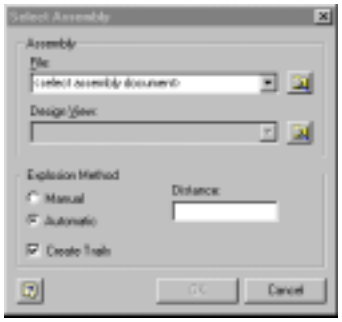
TIP: The first view that you add associates the presentation file to a model. You can add as many presentation views as needed of that model. All measurements in the presentation assume the default units specified in the model.



Create Presentation View

As you develop a presentation file, you can add as many presentation views as necessary for creating specialized drawing views. Use the Create Presentation View button on the Presentation View Management toolbar.
To automatically create an exploded view, select Automatic as the Explosion Method, and set the distance and trail options.

You can set a standard tweak distance for all components when you create a presentation view. Use the Create Presentation View button on the Presentation View Management toolbar.



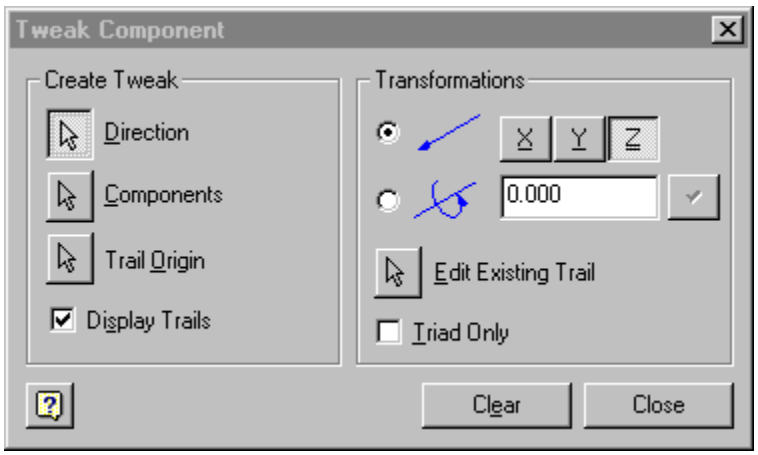
The Select Assembly dialog box selects the model and view to document and sets the orientation of the view.

File	Specifies the part, assembly, or presentation file to use for the drawing view. Specify the file name in one of the following ways. • Enter a file name in the box. • Click the arrow to select from the list of open files. • Click the Explore button to browse for the file.
Design View	This option is available if the selected file is an assembly that contains defined design views. Specifies the assembly design view to use. The name of the active design view is displayed in the box. To use another view in the active design view file, click the arrow to select from the list. To use a design view file that is not currently open, click the button to browse for the file.
Explosion Method	Manual - Creates the presentation view without creating an exploded view. You can manually add tweaks to create an exploded view later. Automatic - Sets the tweak distance and other options to automatically create an exploded view from the presentation view.
Distance	Specifies the standard tweak distance for each component when creating an exploded view. Enter the desired distance. Available only when Automatic is selected.
Create Trails	Displays the trails for each tweaked component when creating an exploded view. Available only when Automatic is selected.

TIP: To create several presentation views from the same design view, add the first view then use Copy and Paste to add copies of it. Each of the views can be modified without affecting the others.

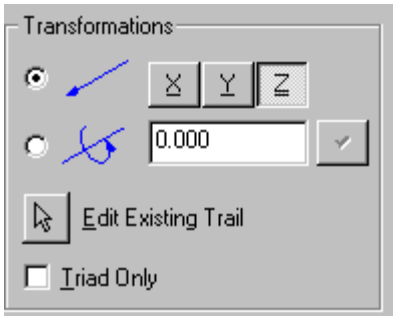
Tweak Components

A tweak is when a component is moved out of its proper assembled position in order to view the assembly. The 'Tweak Components' tool specifies the tweak distance, direction, and other settings for a selected component or group of components when creating an exploded presentation view. Components can be moved and/or rotated.



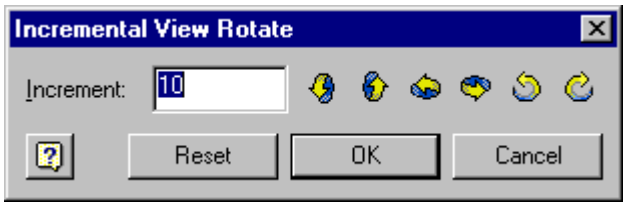
The Selections area of the dialog box allows the user to choose the components to tweak and sets the direction and origin of the tweak.	
Direction	Specifies the direction or axis of rotation for the tweak. Click the Direction button, then select an edge, face, or feature of any component in the graphics window to display the direction triad for the tweak.
Components	Selects the components to tweak. Click the Components button, then select the components in the graphics window or browser.
Trail Origin	Sets the origin for the trail. Click the Trail Origin button, then click in the graphics window to set the origin point.
Display Trails	Sets the display of trails when tweaking the components in an exploded view. Select the box to display the tweak trails for the selected components; clear the check box to hide the trails.
Clear	Clears the Component and Direction selections so that you can set up another tweak.

TIP: Click the open space in the browser to clear only the component selection.



The Transformations section of the dialog box sets the distance and type of tweak for the selected components in an exploded view. After specifying the desired settings, click Apply to add the tweak to the view.	
Translate	Sets the distance and axis for the tweak. Select Translate, click X, Y, or Z to indicate the vector (as indicated by the direction triad), then enter the distance for the tweak in the box. When the desired tweak is set, click Apply to implement it.
Rotate	Changes the angle of the tweak triad. Select Rotate, click X, Y, or Z to indicate the axis, then enter the angle or rotation.
Edit Existing Trail	Allows the user to select an existing trail and modify it.
Triad Only	Specifies whether to rotate the selected components when the tweak triad is rotated. Select the option to include the components in the rotation, clear the box to rotate only the tweak triad.

Precise View Rotation



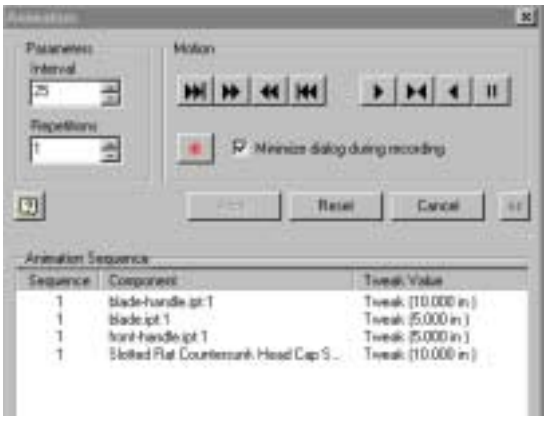
The Precise View Rotation tool rotates the assembly presentation view by specified increment.

Increment	Sets the distance, in degrees, the view will rotate with each click.
	Rotates the view by the specified increment distance. Click an arrow to rotate the view in the desired direction.

Animation Tool

Sets up an animation of the active exploded view and records the animation to a file that you can replay.

Parameters specify the speed and number of repetitions for the animation.	
Interval	Sets the playback speed for the animation. The higher the number, the greater the time delay between frames. Enter the desired playback speed or use the up or down arrow to select the speed.
Repetitions	Sets the number of times to repeat the playback. Enter the desired number of repetitions or use the up or down arrow to select the number.
Plays the specified animation of the active exploded view.	
	Steps the animation forward one tweak at a time.
	Steps the animation forward one interval at a time. Click the button to move forward one interval.
	Steps the animation in reverse one interval at a time. Click the button to move back one interval.
	Steps the animation in reverse one tweak at a time.
	Plays the animation forward for the specified number of repetitions. Before each repetition the view is set back to its starting position.
	Plays the animation for the specified number of repetitions. Each repetition plays start to finish, then in reverse.
	Plays the animation in reverse for the specified number of repetitions. Before each repetition the view is set back to its ending position.
	Pauses the animation playback.
	Records the specified animation to a file so that you can play it back later.
Minimize during record	Minimizes the dialog box while the animation is being recorded. Select the box to minimize the dialog box; clear the check box to leave the dialog box active.



The Animation Sequence located under the More button changes the animation sequence of tweaks. Select the tweak, and then click the button for the desired operation.	
Move Up	Moves the selected tweak up one place in the list.
Move Down	Moves the selected tweak down on place in the list.
Group	Groups the selected tweaks to keep them together as you change the sequence. When tweaks are grouped, the group assumes the sequence order of the lowest tweak number.
Ungroup	Ungroups the selected tweaks so that they can be moved individually in the list. The first tweak in the group assumes a number one higher than the group. The remaining tweaks are numbered sequentially following the first.

TIP: You can pause the animation, stop the record and save it, then start a new recording from the pause point.

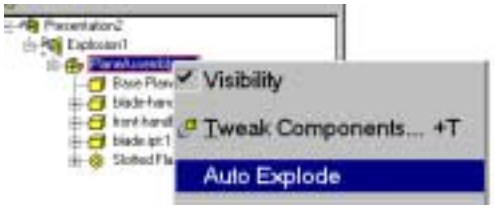
Creating a Presentation View

Select ‘Create View’ from the Tool list.

Use the ‘Browse’ button to locate our assembly file.

NOTE: Inventor will not work properly unless all the files being used are in the proper path. Files need to be located in the directory path workspaces/Project. If they are not located there, either add the correct path using ‘Tools’ or copy the files over.

Set the ‘Explosion Method’ to Automatic. ‘Distance’ to 1. Enable ‘Create Trails’ as shown.
Press ‘OK’.



You can add a standard explosion distance to the components in the selected assembly or subassembly.

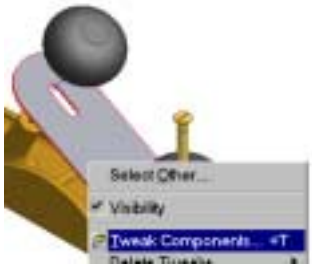
1. Right-click the assembly name in the browser and select Auto Explode from the menu.
2. In the dialog box, enter the standard tweak distance.
3. To display the trails for the automatic tweaks, make sure that Display Trails is selected.
4. Click the preview button to check the effect of your entries before clicking OK to accept them.

TIP: The specified distance will be added to any existing tweaks in the view.

Adding a Tweak

To add a tweak to a component:

- Highlight it in the Browser, right-click and select 'Tweak Components'
- Select it in the graphics window, right-click and select 'Tweak Components'
- Select the 'Tweak Component' tool and then select the component(s) to tweak
- Type 'T' on the keyboard



TIP: If a component is selected when you select the Tweak Components', it is automatically included in the components. Click the Clear button to clear the selections.

You can add tweaks to a component or group of components in an existing view. Use the Tweak Components button on the Presentation View Management toolbar.

1. Click the Tweak Components button.
2. In the graphics window, click a face, feature, or edge in the view to set the direction triad.
3. Select the components to tweak.
4. Click and drag an arrowhead on the direction vector to create a tweak in the direction of the arrow.
5. When the desired result is previewed in the graphics window, click Apply to implement the changes.

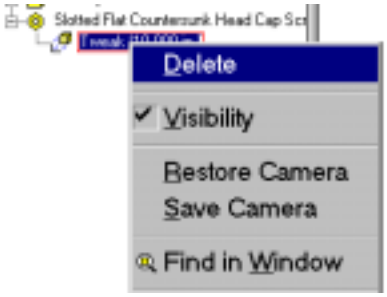
To add other tweaks, click the Clear button to reset the selections and repeat the previous steps.

TIP: You can also enter the tweak distance and set the direction vector using the settings in the dialog box.

Delete a Tweak

To delete a tweak, expand the browser to show the tweak on the component. Select, right click and select 'Delete'.

Tweak Options



When a tweak is selected, the context menu may contain the following options.

Delete	Deletes the selected tweak from the presentation view.
Visibility	Sets the visibility of the trail segment. Select visibility to display the trail segment in the presentation view; clear the check mark to hide the trail segment.
Restore Camera	Restores the view of the active presentation to the last saved camera view. Available only if you have saved a camera view and then made changes to the view.
Save Camera	Sets the current view (vector and zoom) of the active presentation as the default view. After saving the view, you can use Restore Camera to return to that view at any time.
Find in window	Highlights the selected tweak and zooms the view to center it in the graphics window.

TIP: If the trails for the component are hidden, you cannot display a trail segment by turning on its visibility. Show the trails, then set the visibility of the trail segments.

Modifying a Trail

Trails in an exploded presentation view initially show the path used as components were moved to create the view. When you automatically explode a view, or add manual tweaks for individual components, you can choose whether to show the trails or hide them as the components are tweaked to create the view.

After creating tweaks, you can show or hide trails or move end points or segments of a trail. You can also add trails to existing tweaks to further clarify relationships between components in an exploded view.

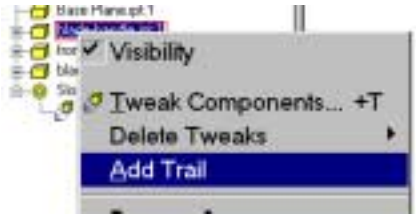
You can set the visibility of trails in an exploded view.

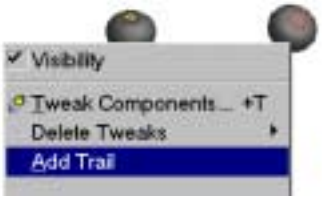
- To hide the trails for a component, select the component in the graphics view or browser, right-click, and select Hide Trails.
- To turn off the visibility of an entire trail, select the trail in the graphics window, right-click, and select Visibility to clear the check mark.
- To turn off the visibility of a trail segment, select the tweak in the browser, right-click, and select Visibility to clear the check mark.

After a trail is created you can move its start point and end point. For some multiple segment trails you can also change the trail by moving one or more of its segments Trail segments that can be moved are displayed in a different color than those that are static.

1. In the graphics window, move the cursor over the start point, end point, or trail segment to display the degrees of freedom arrows.
2. Drag the point or trail segment in any of the indicated directions.

Add a Trail





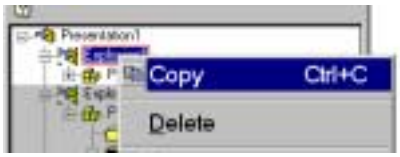
You can add a trail to an existing tweak to clarify relationships between components. For example, you may want to add trails between corresponding features on the components.

1. Select the component in the browser or the graphics window.
2. Right-click and select Add Trail from the menu.
3. Click in the graphics window to set the start point of the trail.
4. Right-click and select Done to place the trail.

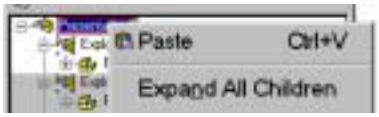
TIP: New trails are generated using the values of the tweak. If the original trail has been moved, the trails may not match.

Changing a trail does not change the path of the tweak.

Copying an Exploded View



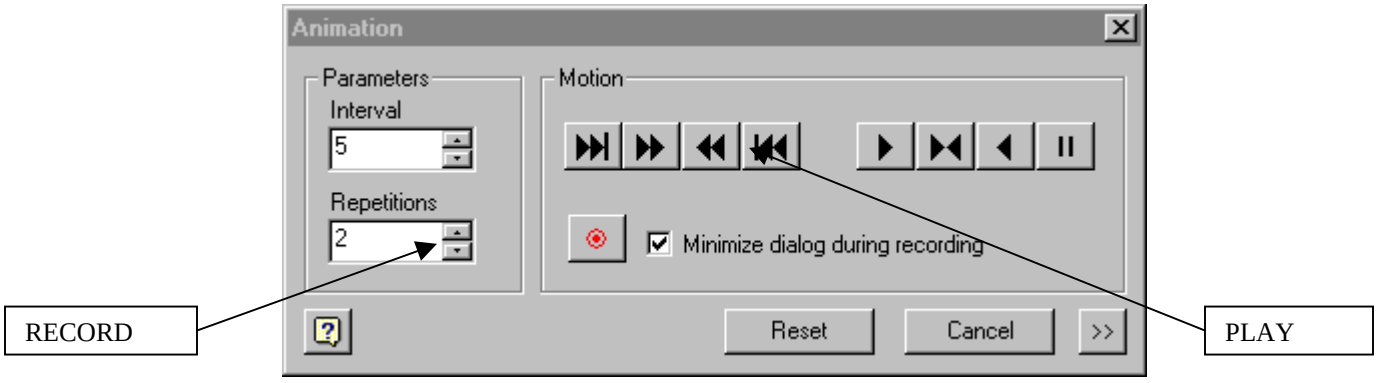
To copy an exploded view, highlight it in the browser, right click and select ‘Copy’.



To paste it to the same presentation file, select the top of the browser list where it says Presentation, right click and select ‘Paste’. We can now modify the copy to create a different version of the exploded view.

Creating an Animation

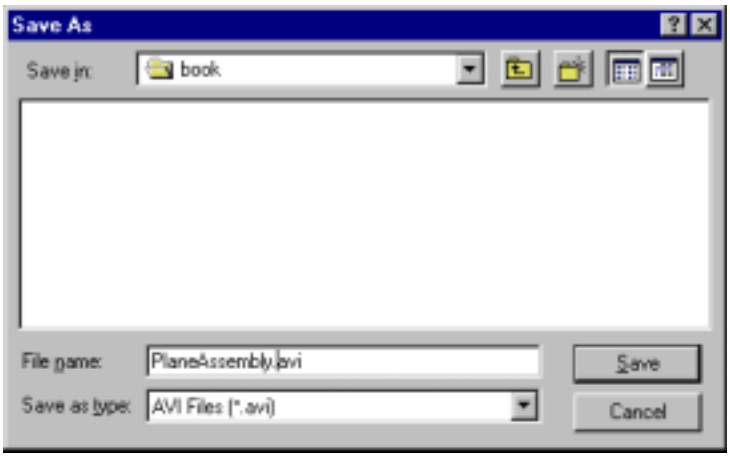
1. Select the ‘Animate’ tool under Presentation View Manager.



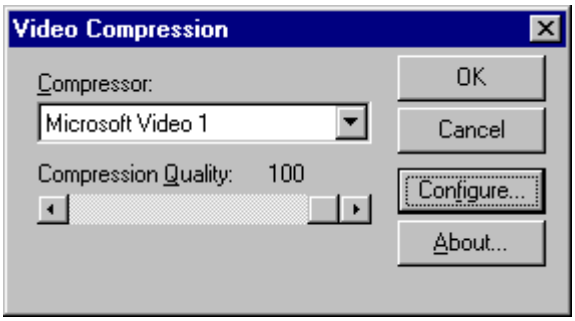
2. The Animation dialog box comes up. Set the Interval to 5 and the Repetitions to 2. Make sure the Minimize dialog is enabled. Press the ‘Play’ button.

3. To restore the assembly to an exploded view, highlight the desired view, right click and select ‘Activate’. Verify that the exploded view appears the way you want.

4. Press the Record button.

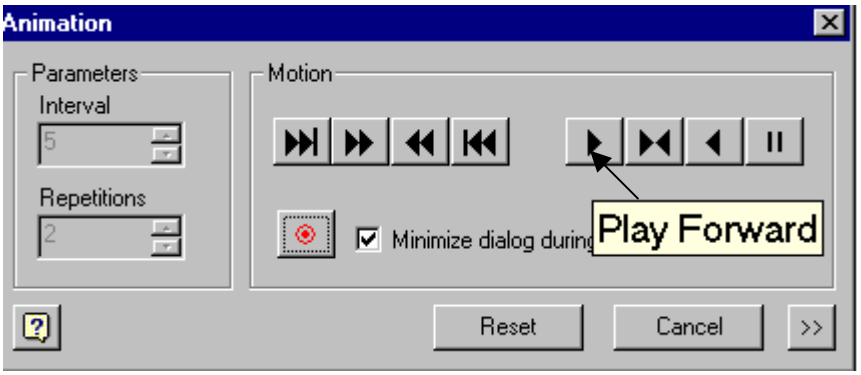


5. A dialog box comes up asking for the location and file name for the avi. Set the file name to PlaneAssembly.

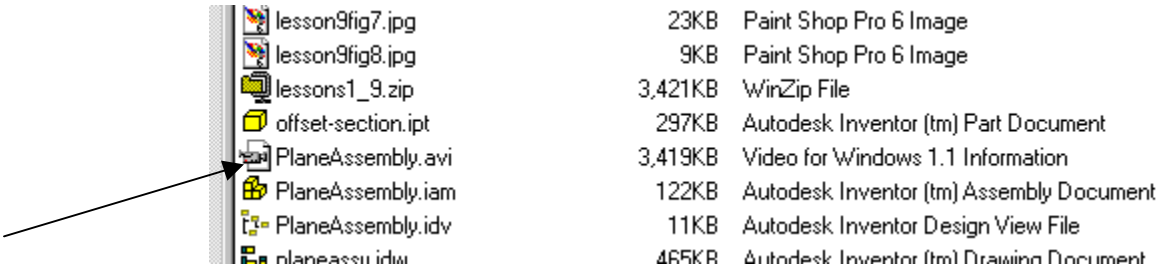


7. The Video Compression dialog box comes up. Set it to Microsoft Video 1 to make the file Microsoft compatible. Set the Compression Quality to 100.

Press 'OK' twice to close all the dialog boxes.



8. Press the 'Play Forward' button. The model will animate while the system records the avi.

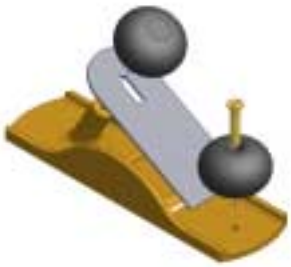


9. Use Windows Explorer to locate the avi file we just created.

10. Double click on the file to play it.

We have created an animation that can be loaded to a website or shown to a client.

Save our file as 'Explode1.ipn'.



Presentation Tools

Button	Tool	Function
	Create Presentation View	Creates a new presentation view of an assembly
	Tweak Component	Moves components to create exploded views.
	Precise View Rotation	Rotates the view vector around the X/Y/Z axis in increments
	Animate	Animates the tweaks. Creates avi files.

Review Questions

1. True or False

Presentation files are used to create exploded views for drawing files.

2. True or False

Presentation files are used to create animation files.

3. True or False

A presentation files can contain more than one exploded view.

4. True or False

You can use the Visibility option to turn off the visibility of parts to develop a series of views to illustrate assembly instructions.

5. True or False

All measurements in a presentation file assume the default units used in the part or assembly file.

6. True or False

To create an exploded view, the user must manually move each component into position.

7. True or False

When creating an exploded view, trails can not be added automatically.

8. True or False

If you modify a copy of an exploded view, the source view will also change.

9. A tweak is:

    A. When you modify a component's size
    B. When you modify a component's location in an exploded view
    C. When you draw a line between components in an exploded view
    D. When you rotate an entire assembly

10. The Precise View Rotation

    A. Adds a rotation tweak
    B. Rotates an entire assembly
    C. Rotates only selected components
    D. Rotates the active view

ANSWERS: 1) T; 2) T; 3) T; 4) T; 5) T; 6) F; 7) F; 8) F; 9) B; 10) D