	ODYSSEY (v.6)	Spartan Student Edition (v.7)
Platforms		
Windows	Win 7 or newer	Win 7 or newer
macOS / OS X	10.8 or newer	10.9.5 or newer
3D Visualization		
Styles (Wire, Ball&Spoke, Space Filling, etc.)	5	5
Models Side-by-Side	2-4	Any Number
Multiple Styles in Same Model	Via Edit→Select	Via Properties Dialog
Synchronize Side-by-Side Simulations	✓	N/A
Scroll through Daisy-Chained Models	Selected Examples	Any List of Models
Align Similar Molecules	No	✓
Show Hydrogen Bonding, Show Dipoles	✓	✓
Show Idealized Lone Pair Positions	✓	No
Show Collisions, Show Reactive Events	✓	N/A
Show Velocity Vectors, Show Trajectories	✓	N/A
Emphasize H-Bonds/Dipoles/Collisions	✓	No
Ribbons for Biopolymers	✓	✓
Chirality Labels	Selected Models	✓
Red-Green-Blue Color Scale (for Isosurfaces)	✓	✓
Red-White-Blue Color Scale (for Isosurfaces)	No	✓
Custom Ranges for Property Maps	No	✓
Hyperlinkable from PowerPoint	✓	✓
Export of JPG/PNG/BMP Images	✓	✓
SMILES Export (EXPERT Setting)	✓	No
Quicktime Recording	No	✓
Declare Custom Colors	✓	✓
Anaglyph Red-Blue Stereo	✓	✓
Changing Parameters		
Change Bond Length, Graphically Driven	✓	In Build Mode
Change Torsion Angle, Graphically Driven	✓	In Build Mode
Set Bond Length, Numerical Entry	No	✓
Set Bond Angle, Numerical Entry	No	✓
Set Torsion Angle, Numerical Entry	No	✓
Move Molecules Relative to Each Other	✓	In Build Mode
Change Temperature	✓	N/A
Change Simulation Cell Volume	✓	N/A
Change Numbers of Molecules	✓	N/A
Change Time Step (to Slow Down Motion)	✓	N/A

	ODYSSEY	Spartan Student Edition
Building New Models		
2D Sketcher	No	✓
3D Entry-Level Builder	✓	✓
3D Advanced/Inorganic Builder	✓	✓
3D Crystal Builder (Solids)	52 Templates	No
3D Disordered Phase Builder (Gases, Liquids)	✓	No
3D Peptide Builder	Simplified	✓
3D Nucleotide Builder	Simplified	✓
Maximum Number of Atoms, General	9,999 (per Atom Type)	No Limit
Maximum Number of Atoms, Crystal Builder	1,500	N/A
Chemical Validity Check	✓	No
Build with Clipboard	No	✓
Define Planes and Virtual Points	No	✓
Name Acyclic Organic Molecules	Any Molecule	For Molecules in Database
Name Other Molecules	For Molecules in Database	For Molecules in Database
IUPAC or Common Names (for Built-In Models)	✓	N/A
Add Arbitrary Labels	✓	No
PDB File Import	Drag and Drop	By PDB ID
CACTUS Chemical Structure Lookup	No	By Name
ChemDraw Import	Drag and Drop	Integrated
Spartan Database Search	No	Integrated
SMILES Import	Drag and Drop	Drag and Drop
New User Tutorials (for Building Models)	25 Built-In Lessons	PDF Files
Molecular Mechanics		
Find Local Energy Minimum	Single-Click	Single-Click
Calculate Normal Modes	No	Yes (Job Submission)
Set Constraints	No	✓
Calculate Conformer Distribution	No	✓
Molecular Dynamics		
Start Interactive Simulation	Single-Click	No
Control Simulation Speed with Slider	✓	N/A
Recommended Maximum Number of Atoms	~1,000	N/A
Translational and Rotational Motion	Always	N/A
Intramolecular Vibrational Motion	Yes (Unless Constrained)	Can Show Normal Modes
Periodic Boundaries for Condensed Phases	✓	No

	ODYSSEY	Spartan Student Edition
Electronic Structure		
Calculate (from Quantum Mechanics)	Single-Click	Job Submission
Semiempirical Model (PM3)	(Always Followed by HF)	Up to 75 Atoms
Hartree-Fock Model	Up to 30 Atoms	Up to 30 Atoms
DFT (B3LYP and EDF2)	No	Up to 30 Atoms
Moller-Plesset (MP2)	No	Up to 20 Atoms
Electron Density Isosurfaces	✓	✓
Arbitrary Isovalue for Surfaces	No	✓
Polarity Maps (Electrostatic Potential Maps)	✓	✓
Atomic Orbitals	Pre-Calculated Examples	✓
Cross-Sections ("Slices")	Pre-Calculated Examples	✓
Molecular Orbitals	Pre-Calculated Examples	✓
Electrostatic Potentials, Spin Densities	Pre-Calculated Examples	✓
LUMO Maps, Ionization Potentials	No	✓
Choice of Basis Set	No	✓
Inclusion of Solvent (Continuum Model)	No	✓
Control over Graphical Resolution	No	✓
Time Estimates (for Submitted Calculations)	N/A	✓
Analysis		
Distances, Angles, and Torsion Angles	✓	✓
Atomic/Molecular Properties	✓	✓
Thermodynamic Properties	✓	✓
Dynamic Properties	✓	N/A
QSAR Properties	No	✓
Symmetry Detection (Point Groups)	No	✓
Extended Property List (EXPERT Setting)	✓	N/A
Orbital Energy Diagrams	No	✓
Integrated Spreadsheet	No	✓
Export to Excel	N/A	✓
XY Plots	✓	✓
Linear Regression	✓	✓
Polymial Fit	✓	✓
Lorentzian Fit, Gaussian Fit, Other Fits	No	✓
Reciprocal and Logarithmic Axes	✓	No
Radial Distribution Function (EXPERT Setting)	✓	No
Ramachandran Plots	No	✓
Kinetic Energy/Speed Histograms	✓	N/A
IR Spectra	No	✓
NMR Spectra (Proton and C-13)	No	✓

	ODYSSEY	*Spartan* *Student Edition*
Chemical Reactions		
Reaction Dynamics at Set Temperature	Selected Examples	No
Dynamic Equilibria	Selected Examples	No
Examine Reaction Profiles	Selected Examples	✓
Find Transition States	No	✓
Integrated Content		
Prebuilt Models (Molecules, Bulk Samples)	> 3,000	No
Quick Visuals (Demonstrations)	> 120	No
Molecular Labs (Worksheets)	> 120	No
Concepts & Applications (Essays and Models)	> 160	No
Molecular Stockroom	✓	No
New User Tutorials (for Operation of Program)	14 Built-In Lessons	PDF Files
Content Search Engine	✓	N/A
Wikipedia Access	Hyperlinks	By Keyword
Periodic Table of the Elements	✓	No
Listed Misconceptions (for Molecular Labs)	*Instructor's Ed.* **Only**	N/A
Comments (for Molecular Labs)	✓	N/A
Assessment Questions	> 1,200	No
Google Forms Worksheet Questions	*Instructor's Ed.* **Only**	N/A
Answer Key	*Instructor's Ed.* **Only**	N/A
Add Model Snapshots to Answers	✓	N/A
Annotation of Pages	✓	N/A
Customization of Questions	*Instructor's Ed.* **Only**	N/A
Authoring Capability	*Instructor's Ed.* **Only**	N/A
Japanese Language Content	✓	No
Spanish Language Content	✓	No
German Language Content	✓	No