Name
TA

Chemistry 11
2021-2022

Learning Guide # 7: Quantum Theory and Electronic Structure

BIG IDEA: Quantum Mechanics, Atomic Orbitals, and Electron Configuration

Fundamental Knowledge (I know)

- ☐ The features of a wave AND how to calculations dealing with Wave Length
- ☐ The different electron orbitals their associated energy levels (aka, which level to assign first, second, third, etc.)
- ☐ How to correctly assign an element's electrons to the correct orbital

Curricular Competencies (I can)

	Proficiency Scale Teacher and Student self assessment (Circle one)	**Evidence (How do you know?)**
I can: Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies.	**Emerging (EMG)** **Initial Understanding** **Developing (DEV)** **Partial/Near Complete Understanding** **Proficient (PRF)** **Complete Understanding** **Extending (EXT)** **Sophisticated Understanding**	
Construct, analyze, and interpret graphs, models, and/or diagrams	**Emerging (EMG)** **Initial Understanding** **Developing (DEV)** **Partial/Near Complete Understanding** **Proficient (PRF)** **Complete Understanding** **Extending (EXT)** **Sophisticated Understanding**	

Student Signature: **Teacher Signature:**

Date:

Instructions To help guide your learning, make your way through the activities in Option 1, Option 2, or Option 3. You may "mix and match" between the different Option columns.

TOPIC	OPTION 1	OPTION 2	OPTION 3
History of Quantum Theory	**Create** a glossary of the "Key Words" in chapter 7 (Just 7.1, 7.5, 7.7.7.8, and 7.9) (Pgs. 268 – 272, 283 – 286, 288 - 302) **Read** Pages 268 – 273 and **complete Review Question**s: 7.1, 7.2, 7.3, and 7.5 on Pg. 303. **Complete *"Example: Practice Exercises"*** 7.1 and 7.2 on Pgs. 269 and 270.	**Create** five (5) questions similar to **"Example"** 7.1 and 7.2. **Complete Review Question**s: 7.1, 7.2, 7.3, and 7.5 on Pg. 303. **Complete *"Example: Practice Exercises"*** 7.1 and 7.2 on Pgs. 269 and 270.	**Choose your own adventure!** Pick up a planning sheet from the Science Kiosk. Create a plan! Make sure you read through the first page of this LG, as you will need to design ways to learn/practice and show your understanding of the topic(s) and skill(s) (competencies.) You will need to have a teacher approve your plan before beginning the LG.
Quantum Mechanics	**Read** Pages 274 – 283 and **complete Review Question**s: 7.43 and 7.44, on Pg. 305.	**Write** a paragraph summarizing the information about quantum mechanics. **Complete Review Question**s: 7.43 and 7.44, on Pg. 305.	
Atomic Orbitals	**Read** Pages 288 – 292 and **complete Review Question**s: 7.48, on Pg. 305.	**Create** a digital presentation explaining how to draw the electron configuration of ground state elements. Use visuals and examples in your presentation to show your learning. **Complete Review Question**s: 7.48, on Pg. 305.	
Electron Configuration	**Read** Pages 292 – 298 and **complete Review Question**s: 7.71, 7.72, and 7.73 on Pg. 306.	**Complete Review Question**s: 7.71, 7.72, and 7.73 on Pg. 306.	
The Build Up Principle	**Read** Pages 298 – 302 and **complete Review Question**s: 7.81 on Pg. 306. **Complete *"Example: Practice Exercises"*** 7.11 on Pgs. 301 and 302.	**Complete Review Question**s: 7.81 on Pg. 306. **Complete *"Example: Practice Exercises"*** 7.11 on Pgs. 301 and 302.	
Chapter Review	**Complete *"problems"* 7.8, 7.65, 7.76, 7.90, and 7.114**		
Lab	NO LAB		
Self Assessment	Reflect on the Fundamental Knowledge and Curricular Competencies. Use the rubric and make goals to improve for your next learning guide.		
Interview or Quiz	See you teacher for an interview or to have a quiz slip signed for the test center. Bring your work and staple it to your quiz when complete.		

Resources can be found at www.THSSscience.com or the Science Kiosk
*User: **THSS***
*Password: **science***