

Animation Worksheet: Power Flow, ZF 8HP

Name: _____ **Date:** _____

1. The ZF 8HP is an eight-speed automatic transmission that achieves its gear ranges using four _____ gear sets, two brakes, and three clutches.
2. To help the vehicle launch smoothly with high torque, First gear provides a gear ratio of _____ to 1.
3. To engage First gear, the input shaft is connected to the sun gear of Gearset 4 by applying Clutch _____.
4. During a shift into Second gear, Gearset 2 acts as an overdrive system, which causes the sun gear of Gearset 4 to become _____ with respect to the input shaft.
5. When the transmission shifts into Third gear, Brake A is released and Clutch C is applied, while Brake B and Clutch _____ remain closed.
6. To transition into Fourth gear, Clutch C is released and Clutch D is applied to lock the planetary _____ of Gearsets 3 and 4 together.
7. The gear ratio is stepped down to _____ to 1 in Fifth gear as Clutches C and D, and Brake B, are engaged.
8. Sixth gear represents a direct drive state where all internal gears spin together as a single unit, creating a ratio of _____ to 1.
9. In Seventh gear, Brake A is engaged and Clutch E is released, which forces Gearset _____ to act as the overdrive member.
10. To drive the vehicle backward in Reverse, Clutch D is engaged alongside Brakes A and B, turning the output carriers in reverse to establish a ratio of _____ to 1.