Feekes and Zadoks Scales of Small Grain Development

(Adapted from NC State University 2017 Wheat Production Guide) https://content.ces.ncsu.edu/pdf/small-grain-production-guide/2017-02-06/AG580-web.pdf

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| Feekes | Zadoks | General Description |
| Vegetative Growth & Tillering | | |
| 1 | 10 | 1st leaf through coleoptile |
|  | 12 | 2nd leaf unfolded |
|  | 13 | 3rd leaf unfolded |
| 2 | 21 | Main shoot and 1 tiller |
|  | 22 | Main shoot and 2 tillers |
|  | 23 | Main shoot and 3 tillers |
| 3 | 26 | Main shoot and 6 tillers |
| 4 – 5 | 30 | Tillering ended, leaf sheaths strongly erected |
| Stem Extension | | |
| 6 | 31 | 1st node detectable |
| 7 | 32 | 2nd node detectable |
| 8 | 37 | Flag leaf just visible |
| 9 | 39 | Flag leaf ligule visible |
| 10 | 45 | Boots swollen |
| Heading and Flowering | | |
| 10.1 | 50 | 1st spikelet visible through split boot |
| 10.2 | 52 | ¼ head emerged |
| 10.3 | 54 | ½ head emerged |
| 10.4 | 56 | ¾ head emerged |
| 10.5 | 58 | Head fully emerged |
| 10.51 | 60 | Start of flowering  If the first few anthers are seen hanging from florets/spikelets in the central portion of the spike, your wheat is at 10.51 |
| Kernel Formation | | |
| 10.54 | 71 | Milk stage – watery ripe |
| 11.1 | 75 | Milk stage – medium milk |
| 11.2 | 85 | Soft dough |
|  | 87 | Hard dough |
| 11.3 | 91 | Dry matter accumulation ends |
| 11.4 | 92 | Harvest ripe |