

## Appendix A:

### Alignment of Catalyst Learning Curricula Case Studies with AP Biology College Board Required Standards for Big Idea 1

Big Ideas	Essential Knowledge	Learning Objectives							
			AIDS	Diabetes	Cancer	Hemoglobin	Depression/Addiction	Sonoran Desert	Ants
1	1.A.1.a.		X	X	X	X	X	X	X
1	1.A.1.b.		X		X	X	X	X	X
1	1.A.1.c.		X	X	X	X	X	X	X
1	1.A.1.d.		X		X	X	X	X	X
1	1.A.1.e.		X		X	X	X	X	X
1	1.A.1.f.		X	X	X	X	X	X	X
1	1.A.1.g.		X		X	X	X	X	X
1	1.A.1.h.					X			
		LO 1.1				X			
		LO 1.2		X		X		X	X
		LO 1.32	X			X		X	X
1	1.A.2.a.		X	X		X		X	X
1	1.A.2.b.		X	X	X	X		X	X
1	1.A.2.c.		X	X		X		X	X
1	1.A.2.d.		X					X	X
		LO 1.4	X			X			
		LO 1.5	X	X		X		X	X
1	1.A.3.a.							X	X
1	1.A.3.b.			X		X		X	X
		LO 1.6				X			
		LO 1.7				X			
		LO 1.8				X			
1	1.A.4.a.		X						
1	1.A.4.b.1.							X	
1	1.A.4.b.2.		X	X				X	
1	1.A.4.b.3.		X	X	X	X			X
1	1.A.4.b.4.					X		X	
		LO 1.9	X	X		X		X	X
		LO 1.10	X	X		X		X	X
		LO 1.11	X			X		X	X
		LO 1.12		X	X	X	X	X	X
		LO 1.13	X	X	X	X	X	X	X
1	1.B.1.a.1.		X	X	X	X			
1	1.B.1.a.2.		X	X	X	X		X	
1	1.B.1.a.3.			X		X	X		
1	1.B.1.b.			X	X	X	X	X	X
		LO 1.14			X	X	X	X	X

		LO 1.15		X	X	X	X	X	X
		LO 1.16	X	X	X	X	X	X	X
1	1.B.2.a.					X		X	X
1	1.B.2.b.					X		X	X
1	1.B.2.c.			X		X		X	X
1	1.B.2.d.					X		X	X
		LO 1.17				X		X	X
		LO 1.18				X		X	X
		LO 1.19				X		X	X
1	1.C.a.							X	
1	1.C.b.							X	
		LO 1.20						X	
		LO 1.21						X	
1	1.C.2.a.							X	X
1	1.C.2.b.							X	X
		LO 1.22						X	X
		LO 1.23						X	X
		LO 1.24						X	X
1	1.C.3.a.		X		X	X		X	X
1	1.C.3.b.		X		X	X		X	X
		LO 1.25	X		X	X		X	X
		LO 1.26	X		X	X		X	X
1	1.D.1.a.1.								
1	1.D.1.a.2.								
1	1.D.1.a.3.			X					
		LO 1.27							
		LO 1.28							
		LO 1.29							
		LO 1.30							
		LO 1.31							
1	1.D.1.a.4.								
1	1.D.1.a.5.								
1	1.D.2.a.1.								
1	1.D.2.a.2.								
1	1.D.2.b.1.		X		X	X		X	X
1	1.D.2.b.2.		X						
		LO 1.32						X	

## Appendix B: Alignment of Catalyst Learning Curricula Case Studies with AP Biology College Board Required Standards for Big Idea 2

Big Ideas	Essential Knowledge	Learning Objectives							
			AIDS	Diabetes	Cancer	Hemoglobin	Depression/Addiction	Sonoran Desert	Ants
2	2.A.1 a.1.			X		X		X	X
2	2.A.1 a.2.			X	X	X		X	X
2	2.A.1 a.3.			X	X	X		X	X
2	2.A.1 b.1.			X		X		X	
2	2.A.1 b.2.			X		X		X	
2	2.A.1 b.3.			X		X			
2	2.A.1 c.			X		X			
2	2.A.1 d.1.			X				X	X
2	2.A.1 d.2.							X	X
2	2.A.1 d.3.			X				X	
2	2.A.1 d.4.			X				X	X
2	2.A.1 d.5.			X				X	X
2	2.A.1 e.							X	X
2	2.A.1 f.			X				X	X
2		LO 2.1		X				X	X
2		LO 2.2		X		X		X	X
2		LO 2.3		X		X		X	X
2	2.A.2.a.1.			X				X	X
2	2.A.2.a.2.			X					
2	2.A.2.b.1.			X					X
2	2.A.2.b.2.					X			
2	2.A.2.c.			X		X			
2	2.A.2 d.1.			X					
2	2.A.2 d.2.			X					
2	2.A.2 d.3.			X					
2	2.A.2 d.4.			X					
2	2.A.2 d.5.			X					
2	2.A.2.e.								
2	2.A.2 f.1.			X		X			
2	2.A.2 f.2.			X		X			
2	2.A.2 f.3.			X		X			
2	2.A.2 f.4.			X		X			
2	2.A.2 g.1.			X		X			
2	2.A.2 g.2.			X		X			
2	2.A.2 g.3.			X		X			
2	2.A.2 g.4.			X		X			
2	2.A.2 g.5.							X	
2	2.A.2.h.			X		X			

2		LO 2.4		X		X			
2		LO 2.5		X		X			
2	2.A.3.a.1.			X		X	X	X	X
2	2.A.3.a.2.								X
2	2.A.3.a.3.			X				X	
2	2.A.3.b.1.			X		X		X	
2	2.A.3.b.2.			X		X			
2		LO 2.6						X	
2		LO 2.7		X					
2		LO 2.8		X		X		X	X
2		LO 2.9		X		X		X	X
2	2.B.1.a.			X		X		X	
2	2.B.1.b.1.		X	X		X	X	X	
2	2.B.1.b.2.			X			X	X	
2	2.B.1.b.3.		X	X		X	X		
2	2.B.1.b.4.			X			X	X	
2	2.B.1.c.1							X	
2	2.B.1.c.2								X
2		LO 2.10		X		X	X	X	
2		LO 2.11		X		X	X	X	
2	2.B.2.a.1.			X		X	X	X	
2	2.B.2.a.2.			X			X	X	
2	2.B.2.a.3.			X		X	X	X	
2	2.B.2.b.1.			X					
2	2.B.2.b.2.			X					
2	2.B.2.c.1		X	X			X		
2	2.B.2.c.2		X	X			X		
2		LO 2.12		X		X	X	X	
2	2.B.3.a.			X	X	X	X	X	
2	2.B.3.b.			X	X	X	X		
2	2.B.3.c.			X				X	
2		LO 2.13		X	X		X	X	
2		LO 2.14						X	
2	2.C.1.a.			X	X	X	X	X	X
2	2.C.1.b.		X	X	X	X	X	X	X
2	2.C.1.c.			X	X	X	X	X	
2		LO 2.15		X	X	X	X	X	X
2		LO 2.16		X	X	X	X	X	X
2		LO 2.17		X		X	X	X	X
2		LO 2.18		X	X	X	X	X	X
2		LO2.19	X	X		X	X	X	X
2		LO 2.20	X	X		X	X	X	X
2	2.C.2.a.		X	X	X	X	X	X	X
2		LO 2.21	X	X	X	X	X	X	X
2	2.D.1.a.		X	X	X	X	X	X	X
2	2.D.1.b.		X	X	X	X	X	X	X
2	2.D.1.c.		X	X		X		X	X
2		LO 2.22	X	X		X	X	X	X
2		LO 2.23	X	X		X	X	X	X
2		LO2.24	X	X		X	X	X	X
2	2.D.2.a.		X	X		X	X	X	X
2	2.D.2.b.			X		X		X	X
2	2.D.2.c.		X	X		X	X	X	X
2		LO 2.25		X		X		X	X

2		LO 2.26	X			X		X	X
2		LO 2.27		X		X		X	X
2	2.D.3.a.		X	X	X	X	X	X	X
2	2.D.3.b.			X	X			X	X
		LO 2.28	X	X					
2	2.D.4.a		X						
2	2.D.4.b.1.		X						
2	2.D.4.b.2.		X						
2	2.D.4.b.3.		X						
2	2.D.4.b.4.		X						
2	2.D.4.b.5.		X						
2	2.D.4.b.6.		X						
2		LO 2.29	X						
2		LO 2.30	X						
2	2.E.1.a.		X	X	X		X		X
2	2.E.1.b.1.				X				X
2	2.E.1.b.2.				X				X
2	2.E.1.b.3.							X	
2	2.E.1.b.4.				X				
2	2.E.1.b.5.				X				
2	2.E.1.b.6.			X	X				
2	2.E.1.c.		X	X	X			X	X
2		LO 2.31			X				
2		LO 2.32			X				X
2		LO 2.33		X	X				X
2		LO 2.34	X	X	X				X
2	2.E.2.a.1.							X	
2	2.E.2.a.2.							X	
2	2.E.2.b.		X	X	X	X	X		X
2	2.E.2.c.								
2		LO 2.35						X	X
2		LO 2.36	X	X				X	X
2		LO 2.37	X	X				X	X
2	2.E.3.a.1.				X		X		X
2	2.E.3.a.2.		X	X	X		X		X
2	2.E.3.b.1.							X	
2	2.E.3.b.2.							X	
2	2.E.3.b.3.		X	X			X		X
2	2.E.3.b.4.		X	X		X	X		X
2		LO 2.38	X	X				X	X
2		LO 2.39	X	X				X	X
2		LO 2.40	X	X				X	X

## Appendix C: Alignment of Catalyst Learning Curricula Case Studies with AP Biology College Board Required Standards for Big Idea 3

Big Ideas	Essential Knowledge	Learning Objectives							
			AIDS	Diabetes	Cancer	Hemoglobin	Depression/Addiction	Sonoran Desert	Ants
3	3.A.1.a.1.		X	X	X	X	X	X	X
3	3.A.1.a.2.							X	X
3	3.A.1.a.3.			X					
3	3.A.1.a.4.i.								
3	3.A.1.a.4.ii.								
3	3.A.1.a.4.iii.								
3	3.A.1.a.5.i.								
3	3.A.1.a.5.ii.								
3	3.A.1.a.6.		X						
3	3.A.1.b.1.			X	X				
3	3.A.1.b.2.i.				X				
3	3.A.1.b.2.ii.			X	X				
3	3.A.1.b.2.iii.			X	X				
3	3.A.1.b.3.i.			X	X				
3	3.A.1.b.3.ii.			X	X				
3	3.A.1.b.4.i.			X	X				
3	3.A.1.b.4.ii.			X	X				
3	3.A.1.b.4.iii.			X	X				
3	3.A.1.b.4.iv.				X				
3	3.A.1.c.1.			X	X	X			
3	3.A.1.c.2.			X	X	X			
3	3.A.1.c.3.			X	X	X			
3	3.A.1.c.4.i.			X	X	X			
3	3.A.1.c.4.ii.			X	X	X			
3	3.A.1.c.4.iii.			X	X	X			
3	3.A.1.c.4.iv.			X	X	X			
3	3.A.1.c.4.v.		X	X	X	X			
3	3.A.1.c.4.vi.			X	X	X			
3	3.A.1.c.4.vii.		X	X	X	X			
3	3.A.1.d.		X	X	X	X	X	X	X
3	3.A.1.e.			X				X	X
3	3.A.1.f.			X				X	
3		LO 3.1	X	X	X	X	X	X	X
3		LO 3.2			X	X	X	X	X
3		LO 3.3	X	X	X	X			
3		LO 3.4	X	X	X	X			
3		LO 3.5		X	X	X			
3		LO 3.6	X	X	X	X			

3	3.A.2.a.1.								X
3	3.A.2.a.2.			X		X			X
3	3.A.2.a.3.			X		X			X
3	3.A.2.a.4.					X			X
3	3.A.2.a.5.					X			X
3	3.A.2.b.1.					X			X
3	3.A.2.b.2.					X			X
3	3.A.2.b.3.			X		X			X
3	3.A.2.b.4.					X			X
3	3.A.2.c.1.					X			X
3	3.A.2.c.2.					X	X		X
3	3.A.2.c.3.					X	X		X
3	3.A.2.c.4.					X			X
3	3.A.2.c.5.					X			X
3		LO 3.7				X			X
3		LO 3.8				X			X
3		LO 3.9				X			X
3		LO 3.10				X			X
3		LO 3.11				X			X
3	3.A.3.a.		X		X	X	X	X	X
3	3.A.3.b.1.		X		X				X
3	3.A.3.b.2.				X				X
3	3.A.3.b.3.		X		X			X	X
3	3.A.3.c.				X	X			X
3	3.A.3.d.					X			X
3		LO 3.12				X			X
3		LO 3.13				X			X
3		LO 3.14	X		X	X			X
3	3.A.4.a.1.			X	X	X			X
3	3.A.4.b.				X				X
3		LO 3.15		X	X	X			X
3		LO 3.16		X	X	X			X
3		LO 3.17		X	X	X			X
3	3.A.4.c.1.				X	X			X
3	3.A.4.c.2.				X				X
3	3.B.1.a.1.		X	X	X	X			X
3	3.B.1.a.2.				X				X
3	3.B.1.b.1.				X				X
3	3.B.1.b.2.				X				X
3	3.B.1.b.3.				X				X
3	3.B.1.b.4.				X				X
3	3.B.1.b.5.				X				X
3	3.B.1.b.6.				X	X			X
3	3.B.1.c.1.		X	X	X				X
3	3.B.1.c.2.		X	X	X				X
3	3.B.1.c.3.			X	X	X			X
3	3.B.1.d.			X	X	X	X	X	X
3		LO 3.18		X				X	X
3		LO 3.19		X	X	X	X		X
3		LO 3.20	X	X	X	X	X		X
3		LO 3.21	X	X	X	X			X
3	3.B.2.a.		X	X	X	X			X
3	3.B.2.b.		X	X	X		X	X	X
3		LO 3.22	X	X	X	X	X		X

3		LO 3.23	X	X	X	X			X
3	3.C.1.a.1.		X	X	X	X	X		
3	3.C.1.b.1.		X		X	X		X	X
3	3.C.1.c.1.				X			X	X
3	3.C.1.c.2.				X				
3	3.C.1.d.1.		X	X	X	X			X
3		LO 3.24	X	X	X	X	X	X	X
3		LO 3.25	X		X	X			
3		LO 3.26	X	17	X	X	X	X	X
3	3.C.2.a.				X	X			
3	3.C.2.b.		X		X				
3	3.C.2.c.				X	X		X	X
3		LO 3.27			X				
3		LO 3.28	X		X	X	X	X	X
3	3.C.3.a.1.		X						
3	3.C.3.a.2.		X						
3	3.C.3.a.3.		X						
3	3.C.3.a.4.		X						
3	3.C.3.a.5.		X						
3	3.C.3.a.6.		X						
3	3.C.3.b.1.		X						
3	3.C.3.b.2.		X						
3		LO 3.29	X						
3		LO 3.30	X						
3	3.D.1.a.			X			X		
3	3.D.1.b.		X	X	X		X		X
3	3.D.1.c.								
3	3.D.1.d.		X	X	X	X	X	X	X
3		LO 3.31	X	X	X	X	X	X	X
3		LO 3.32	X		X	X	X		X
3		LO 3.33	X	X	X	X	X		X
3	3.D.2.a.		X					X	
3	3.D.2.b.		X		X	X	X	X	X
3	3.D.2.c.1.			X	X	X	X	X	X
3		LO 3.34	X	X	X	X	X	X	X
3		LO 3.35	X	X	X	X	X	X	X
3	3.D.3.a.1.		X	X	X	X	X		X
3	3.D.3.a.2.		X	X	X	X	X		X
3	3.D.3.b.1.		X	X	X	X	X		X
3	3.D.3.b.2.		X	X			X		
3	3.D.3.b.3.i.			X			X		X
3	3.D.3.b.3.ii.		X	X					
3		LO 3.36	X	X	X	X	X		X
3	3.D.4.a.		X	X	X	X	X	X	X
3		LO 3.37	X	X	X	X	X		X
3		LO 3.38	X	X	X	X	X		X
3		LO 3.39	X	X	X	X	X		X
3	3.E.1.a.		X	X	X	X	X	X	X
3	3.E.1.b.1.			X			X	X	X
3	3.E.1.b.2.		X	X				X	X
3	3.E.1.c.1.			X			X	X	X
3	3.E.1.c.2.		X	X				X	X
3		LO 3.40		X			X	X	X
3		LO 3.41	X				X	X	X



3		LO 3.42	X	X	X	X
3	3.E.2.a.1.			X		
3	3.E.2.a.2.			X		
3	3.E.2.a.3.			X		
3	3.E.2.b.1.			X		
3	3.E.2.b.2.			X		
3	3.E.2.b.3.			X		
3	3.E.2.c.1.			X		
3	3.E.2.c.2.			X		
3	3.E.2.c.3.			X		
3	3.E.2.d.			X		
3		LO 3.43		X		
3		LO 3.44		X		
3		LO 3.45		X		
3		LO 3.46		X		
3		LO 3.47		X		
3		LO 3.48		X		
3		LO 3.49		X		
3		LO 3.50		X		

## Appendix D: Alignment of Catalyst Learning Curricula Case Studies with AP Biology College Board Required Standards for Big Idea 4

Big Ideas	Essential Knowledge	Learning Objectives							
			AIDS	Diabetes	Cancer	Hemoglobin	Depression/Addiction	Sonoran Desert	Ants
4	4.A.1.a.1.				X				
4	4.A.1.a.2.			X			X		
4	4.A.1.a.3.							X	
4	4.A.1.a.4.			X					X
4	4.A.1.b.1.				X	X			
4	4.A.1.b.2.		X	X		X			
4	4.A.1.b.3.			X					X
4		LO 4.1		X	X	X	X		
4		LO 4.2		X	X	X	X	X	
4		LO 4.3		X	X	X	X		
4	4.A.2.a.			X	X	X			
4	4.A.2.b.1.		X	X					
4	4.A.2.b.2.						X		
4	4.A.2.c.1.		X	X			X		
4	4.A.2.d.1.			X		X			
4	4.A.2.d.2.			X		X			
4	4.A.2.d.3.			X		X			
4	4.A.2.e.						X		X
4	4.A.2.f.							X	
4	4.A.2.g.1.			X					
4	4.A.2.g.2.			X					
4	4.A.2.g.3.			X					
4		LO 4.4	X	X	X	X	X	X	X
4		LO 4.5		X	X	X	X	X	X
4		LO 4.6		X	X	X	X	X	X
4	4.A.3.a.				X		X	X	X
4	4.A.3.b.			X	X		X	X	X
4	4.A.3.c.			X	X		X	X	X
4		LO 4.7		X	X			X	X
4	4.A.4.a.			X		X	X	X	
4	4.A.4.b.			X		X	X	X	X
4		LO 4.8		X	X	X	X	X	X
4		LO 4.9	X	X	X	X	X	X	
4		LO 4.10		X	X	X	X	X	X
4	4.A.5.a.							X	X
4	4.A.5.b.							X	X
4	4.A.5.c.1.		X					X	X
4	4.A.5.c.2.							X	X

4	4.A.5.c.3.							X	X
4	4.A.5.c.4.							X	
4		LO 4.11						X	X
4		LO 4.12						X	X
4		LO 4.13						X	X
4	4.A.6.a.			X		X		X	X
4	4.A.6.b.							X	X
4	4.A.6.c.							X	X
4	4.A.6.d.			X				X	X
4	4.A.6.e.1.							X	X
4	4.A.6.e.2.							X	X
4	4.A.6.f.1.							X	X
4	4.A.6.f.2.			X				X	X
4	4.A.6.g.							X	X
4		LO 4.14		X				X	X
4		LO 4.15						X	X
4		LO 4.16		X				X	X
4	4.B.1.a.			X	X	X	X		
4	4.B.1.b.1.		X				X		
4	4.B.1.b.2.						X		
4	4.B.1.c.		X				X		
4	4.B.1.d.						X		
4		LO 4.17		X			X		
4	4.B.2.a.1.		X	X	X	X	X	X	
4	4.B.2.a.2.			X			X	X	
4	4.B.2.a.3.								
4		LO 4.18	X	X		X		X	
4	4.B.3.a.1.			X				X	X
4	4.B.3.a.2.		X					X	X
4	4.B.3.a.3.							X	X
4	4.B.3.b.			X				X	X
4	4.B.3.c.			X				X	X
4		LO 4.19						X	X
4	4.B.4.a.							X	X
4	4.B.4.b.							X	X
4		LO 4.10						X	X
4		LO 4.21						X	X
4	4.C.1.a.		X	X	X	X	X	X	X
4	4.C.1.b.1.						X		
4	4.C.1.b.2.				X				
4		LO 4.22	X	X	X	X	X	X	X
4	4.C.2.a.		X	X	X	X	X	X	X
4	4.C.2.b.						X	X	X
4		LO 4.23		X	X	X		X	X
4		LO 4.24		X	X	X		X	X
4	4.C.3.a.		X	X		X		X	X
4	4.C.3.b.		X	X	X		X	X	X
4	4.C.3.c.					X		X	X
4		LO 4.25		X	X	X	X	X	X
4		LO 4.26	X	X	X	X	X	X	X
4	4.C.4.a.							X	X
4	4.C.4.b.							X	X
4		LO 4.27						X	X

## Appendix E: Alignment of Catalyst Learning Curricula Case Studies with AP Biology College Board Required Science Practices

Science Practice	AIDS	Diabetes	Cancer	Hemoglobin	Addiction and Depression	Sonoran Desert	Ants
1.1	X	X	X	X	X	X	X
1.2	X	X	X	X	X	X	X
1.3	X	X	X	X	X	X	X
1.4	X	X	X	X	X	X	X
1.5	X	X	X	X	X	X	X
2.1	X	X	X	X	X	X	X
2.2	X	X	X	X	X	X	X
2.3	X	X	X	X	X	X	X
3.1	X	X	X	X	X	X	X
3.2	X	X	X	X	X	X	X
3.3	X	X	X	X	X	X	X
4.1	X	X	X	X	X	X	X
4.2	X	X	X	X	X	X	X
4.3	X	X	X	X	X	X	X
4.4	X	X	X	X	X	X	X
5.1	X	X	X	X	X	X	X
5.2	X	X	X	X	X	X	X
5.3	X	X	X	X	X	X	X
6.1	X	X	X	X	X	X	X
6.2	X	X	X	X	X	X	X
6.3	X	X	X	X	X	X	X
6.4	X	X	X	X	X	X	X
6.5	X	X	X	X	X	X	X
7.1	X	X	X	X	X	X	X
7.2	X	X	X	X	X	X	X